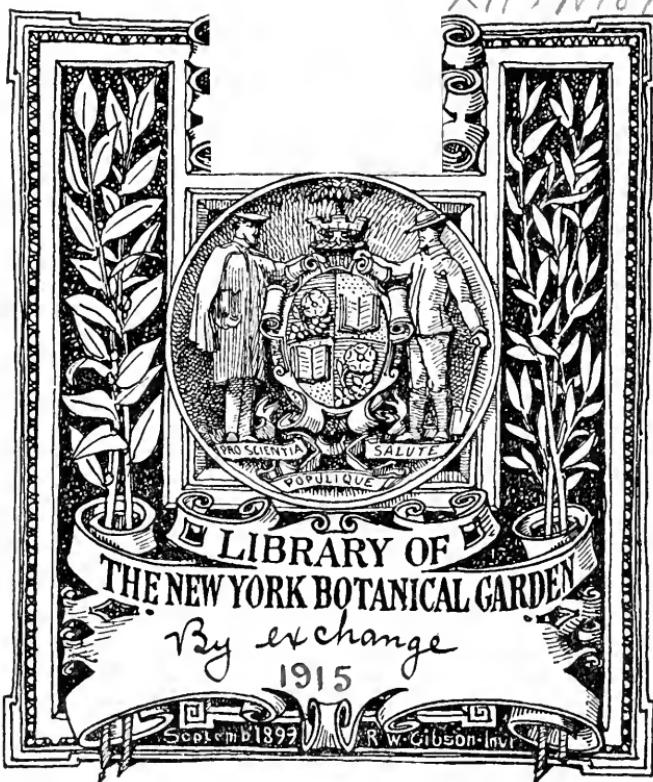




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SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM

REPORT ON THE PROGRESS AND CONDITION OF THE UNITED STATES NATIONAL MUSEUM FOR THE YEAR ENDING JUNE 30, 1914



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UNITED STATES NATIONAL MUSEUM,
UNDER DIRECTION OF THE SMITHSONIAN INSTITUTION,
Washington, D. C., November 28, 1914.

SIR: I have the honor to submit herewith a report upon the present condition of the United States National Museum and upon the work accomplished in its various departments during the fiscal year ending June 30, 1914.

Very respectfully,

RICHARD RATHBUN,

Assistant Secretary, in charge of the National Museum.

Dr. CHARLES D. WALCOTT,
Secretary, Smithsonian Institution.

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REPORT ON THE PROGRESS AND CONDITION OF THE UNITED STATES NATIONAL MUSEUM FOR THE YEAR ENDING JUNE 30, 1914.

By RICHARD RATHBUN,
*Assistant Secretary of the Smithsonian Institution,
in charge of the U. S. National Museum.*

INCEPTION AND HISTORY.

The Congress of the United States in the act of August 10, 1846, founding the Smithsonian Institution recognized that an opportunity was afforded, in carrying out the large-minded design of Smithson, to provide for the custody of the museum of the Nation. To this new establishment was therefore intrusted the care of the national collections, a course that time has fully justified.

In the beginning the cost of maintaining the museum side of the Institution's work was wholly paid from the Smithsonian income; then for a time the Government bore a share, and during the past 39 years Congress has voted the entire funds for the expenses of the museum, thus furthering one of the primary means "for the increase and diffusion of knowledge among men" without encroaching upon the resources of the Institution.

The museum idea was inherent in the establishment of the Smithsonian Institution, which in its turn was based upon a 10 years' discussion in Congress and the advice of the most distinguished scientific men, educators, and intellectual leaders of the Nation of 70 years ago. It is interesting to note how broad and comprehensive were the views which actuated our lawmakers in determining the scope of the Museum, a fact especially remarkable when it is recalled that at that date no museum of considerable size existed in the United States, and the museums of England and of the continent of Europe were still to a large extent without a developed plan, although containing many rich collections.

The Congress which passed the act of foundation enumerated as within the scope of the Museum "all objects of art and of foreign and curious research and all objects of natural history, plants, and geological and mineralogical specimens belonging to the United States," thus stamping the Museum at the very outset as one of the widest range and at the same time as the Museum of the United States. It was also fully appreciated that additions would be necessary to the collections then in existence, and provision was made for their increase by the exchange of duplicate specimens, by donations, and by other means.

If the wisdom of Congress in so fully providing for a museum in the Smithsonian law challenges attention, the interpretation put upon this law by the Board of Regents within less than six months from the passage of the act can not but command admiration. In the early part of September, 1846, the Regents took steps toward formulating a plan of operations. The report of the committee appointed for this purpose, submitted in December and January following, shows a thorough consideration of the subject in both the spirit and letter of the law. It would seem not out of place to cite here the first pronouncement of the board with reference to the character of the Museum:

"In obedience to the requirements of the charter,¹ which leaves little discretion in regard to the extent of accommodations to be provided, your committee recommend that there be included in the building a museum of liberal size, fitted up to receive the collections destined for the Institution. * * *

"As important as the cabinets of natural history by the charter required to be included in the Museum, your committee regard its ethnological portion, including all collections that may supply items in the physical history of our species, and illustrate the manners, customs, religions, and progressive advance of the various nations of the world; as, for example, collections of skulls, skeletons, portraits, dresses, implements, weapons, idols, antiquities, of the various races of man. * * * In this connexion your committee recommend the passage of resolutions asking the cooperation of certain public functionaries and of the public generally in furtherance of the above objects.

"Your committee are further of opinion that in the Museum, if the funds of the Institution permit, might judiciously be included various series of models illustrating the progress of some of the most useful inventions; such, for example, as the steam engine from its earliest and rudest form to its present most improved state; but this

¹ Since the Institution was not chartered in a legal sense, but established by Congress, the use of the word "charter" in this connection was not correct.

they propose only so far as it may not encroach on ground already covered by the numerous models in the Patent Office.

“Specimens of staple materials, of their gradual manufacture, and of the finished product of manufactures and the arts may also, your committee think, be usefully introduced. This would supply opportunity to examine samples of the best manufactured articles our country affords, and to judge her gradual progress in arts and manufactures. * * *

“The gallery of art, your committee think, should include both paintings and sculpture, as well as engravings and architectural designs; and it is desirable to have in connexion with it one or more studios in which young artists might copy without interruption, being admitted under such regulations as the board may prescribe. Your committee also think that, as the collection of paintings and sculpture will probably accumulate slowly, the room destined for a gallery of art might properly and usefully meanwhile be occupied during the sessions of Congress as an exhibition room for the works of artists generally; and the extent and general usefulness of such an exhibition might probably be increased if an arrangement could be effected with the Academy of Design, the Arts Union, the Artists’ Fund Society, and other associations of similar character, so as to concentrate at the metropolis for a certain portion of each winter the best results of talent in the fine arts.”

The important points in the foregoing report are (1) that it was the opinion of the Regents that a museum was requisite under the law, Congress having left no discretion in the matter; (2) that ethnology and anthropology, though not specially named, were yet as important subjects as natural history; (3) that the history of the progress of useful inventions and the collection of the raw materials and products of the manufactures and arts should also be provided for; (4) for the gallery of art the committee had models in existence, and they proposed, pending the gathering of art collections, which would of necessity be slow, to provide for loan exhibitions by cooperating with art academies and societies.

In the resolutions which were adopted upon the presentation of the report, a museum was mentioned as “one of the principal modes of executing the act and trust.”¹ The work was to go forward as the

¹ *Resolved*, That it is the intention of the act of Congress establishing the Institution, and in accordance with the design of Mr. Smithson, as expressed in his will, that one of the principal modes of executing the act and the trust is the accumulation of collections of specimens and objects of natural history and of elegant art, and the gradual formation of a library of valuable works pertaining to all departments of human knowledge, to the end that a copious storehouse of materials of science, literature, and art may be provided which shall excite and diffuse the love of learning among men, and shall assist the original investigations and efforts of those who may devote themselves to the pursuit of any branch of knowledge.

funds permitted, and, as is well known, the maintenance of the Museum and the library was long ago assumed by Congress, the Institution taking upon itself only so much of the necessary responsibility for the administration of these and subsequent additions to its activities as would weld them into a compact whole, which together form a unique and notable agency for the increase and diffusion of knowledge, for the direction of research, for cooperation with departments of the Government and with universities and scientific societies in America, and likewise afford a definite correspondent to all scientific institutions and men abroad who seek interchange of views or knowledge with men of science in the United States.

Since that early day the only material change in the scope of the Government Museum has been the addition of a department of American history, intended to illustrate by an appropriate assemblage of objects the lives of distinguished personages, important events, and the domestic life of the country from the colonial period to the present time.

The development of the Museum has been greatest in those subjects which the conditions of the past 64 years have made most fruitful—the natural history, geology, ethnology, and archeology of the United States, supplemented by many collections from other countries. The opportunities for acquisition in these directions have been mainly brought about through the activities of the scientific and economic surveys of the Government, many of which are the direct outgrowths of earlier explorations, stimulated or directed by the Smithsonian Institution. The Centennial Exhibition of 1876 afforded the first opportunity for establishing a department of the industrial arts on a creditable basis, and of this the fullest advantage was taken, though only a part of the collections then obtained could be accommodated in the space available. The department or gallery of the fine arts had made little progress, though not from lack of desire or appreciation, until within the past eight years, during which its interests have been markedly advanced.

With the completion of the new large granite structure on the Mall, the Museum has come virtually into possession of a group of three buildings, in which there is opportunity for a proper systematic arrangement of its vast and varied collections as well as a comprehensive public installation, and under these favorable conditions it may be considered to have entered upon an era of renewed prosperity and usefulness.

While it is the primary duty of a museum to preserve the objects confided to its care, as it is that of a library to preserve its books and manuscripts, yet the importance of public collections rests not upon the mere basis of custodianship, nor upon the number of specimens assembled and their money value, but upon the use to which

they are put. Judged by this standard, the National Museum may claim to have reached a high state of efficiency. From an educational point of view it is of great value to those persons who are so fortunate as to reside in Washington or who are able to visit the Nation's capital. In its well-designed cases, in which every detail of structure, appointment, and color is considered, a selection of representative objects is placed on view to the public, all being carefully labeled individually and in groups. The child as well as the adult has been provided for, and the kindergarten pupil and the high-school scholar can be seen here, supplementing their class-room games or studies. Under authority from Congress, the small colleges and higher grades of schools and academies throughout the land, especially in places where museums do not exist, are also being aided in their educational work by sets of duplicate specimens, selected and labeled to meet the needs of both teachers and pupils.

Nor has the elementary or even the higher education been by any means the sole gainer from the work of the Museum. To advance knowledge, to gradually extend the boundaries of learning, has been one of the great tasks to which the Museum, in consonance with the spirit of the Institution, has set itself from the first. Its staff, though chiefly engaged in the duties incident to the care, classification, and labeling of collections in order that they may be accessible to the public and to students, has yet in these operations made important discoveries in every department of the Museum's activities, which have in turn been communicated to other scholars through its numerous publications. But the collections have not been held for the study of the staff nor for the scientific advancement of those belonging to the establishment. Most freely have they been put at the disposal of investigators connected with other institutions, and, in fact, without such help the record of scientific progress based upon the material in the Museum would have been greatly curtailed. When it is possible to so arrange, the investigator comes to Washington; otherwise such collections as he needs are sent to him, whether he resides in this country or abroad. In this manner practically every prominent specialist throughout the world interested in the subjects here well represented has had some use of the collections, and thereby the National Museum has come to be recognized as a conspicuous factor in the advancement of knowledge wherever civilization has a foothold.

AMERICAN HISTORY AND THE ARTS AND INDUSTRIES.

From 1850 until 1881 the collections of the National Museum had only the Smithsonian building as their depository, and in this structure they increased so greatly that all of the available space became filled far beyond its capacity. In the year last named the adjoining brick building was completed and made available for the overflow and for the many large donations received at the Philadelphia Exhibition of 1876. The growth of the collections continued rapidly, however, and in not many years this additional space was also more than occupied, becoming, in fact, so overcrowded that an orderly arrangement ceased to be possible, and the exhibits of natural history, of anthropology, of the arts and industries and of the fine arts were more or less intermingled, unsystematically and with little regard to relationship. The large granite building finished in 1911, or 30 years later, brought the relief so much desired and permitted an organization which had long been looked forward to. This latest building was planned and erected with special reference to the needs of anthropology, biology and geology, composing what is known as the natural history branch of the Museum. The removal of the collections of these departments released about one-half of the exhibition space in the two older buildings, affording opportunity for renewing and increasing the art and industrial collections which at one time had been very prominent, for improving the methods for their administration and display, and for giving them a status of practical and educational usefulness.

It is not to be understood, however, that the arts and industries have remained unrepresented, as several of the branches established in 1881 have been continuously maintained, though under very unsatisfactory conditions, and they will require revision and amplification as well as a strengthening of the expert staff. Among these are such important topics as mechanical technology, transportation, firearms, medicine, the graphic arts, ceramics, glass and metal work, and also American history, which was originally classified in this department. The new subjects, or rather those to be reestablished and in which considerable advancement has even now been made, comprise mainly the great industries concerned with the utilization of mineral, vegetable and animal products, the most significant of all to the welfare of the human race, as they supply our food, our clothing and

our homes. The object of these collections and of the work that will be put upon them is both cultural and practical, and, as in the more progressive of the countries of the Old World, they are in large part designed to furnish very material aid toward the promotion and betterment of art and industrial pursuits in the United States.

For its public exhibitions the department has been allotted the entire floor and gallery space in the older Museum building and the three lower halls in the Smithsonian building. The latter will be used by the division of graphic arts, but owing to extensive repairs and alterations under way the installation of the materials of this division has necessarily been deferred and an account of them must be left for a future report. In this connection, therefore, attention can be directed only to the conditions in the Museum building and to the work there in progress. Before so doing, however, it is important to explain that ample as may seem the accommodations for expansion afforded by these two buildings the time is near when, in the ordinary course of events, these facilities will be entirely exhausted. But the extraordinary must also be looked for, and as instances may be cited the tender, since the close of the year, of a collection of extreme historical importance, valued at many thousands of dollars, which alone would fill one of the large halls, and there is also another collection consisting mainly of works of art of at least the same extent and of even greater value, bequeathed to the Museum, for which there will be no suitable place in either building. These conditions operate to the disadvantage of the Museum in two directions in respect to the arts and industries. Great gifts can not be solicited with the knowledge that no place exists for their accommodation, while, on the other hand, would-be benefactors are deterred from making presents for the same reason. The public has fully awakened to the possibilities of its Museum, and to the benefits which it might, and to a large extent already does, confer, and it is solely in the interest of the public welfare that the Museum seeks to increase its opportunities for doing good.

A detailed account of the older Museum building was published in the annual report for 1903. Its principal features with special reference to the interior are briefly as follows: The main part of the building is square, measuring 300 feet long on each side, and consists of a single story, varying greatly in height in its different sections. At each corner of the square is a relatively large pavilion and in the middle of each façade is a broad tower which project $12\frac{1}{2}$ feet from the main building line and increase the length of each frontage to 325 feet. Architecturally the building, which is of brick, consists of a central rotunda from which four naves extend in the direction of the four main points of the compass, in the form of a Greek cross. Following the outer walls and connecting the naves are eight

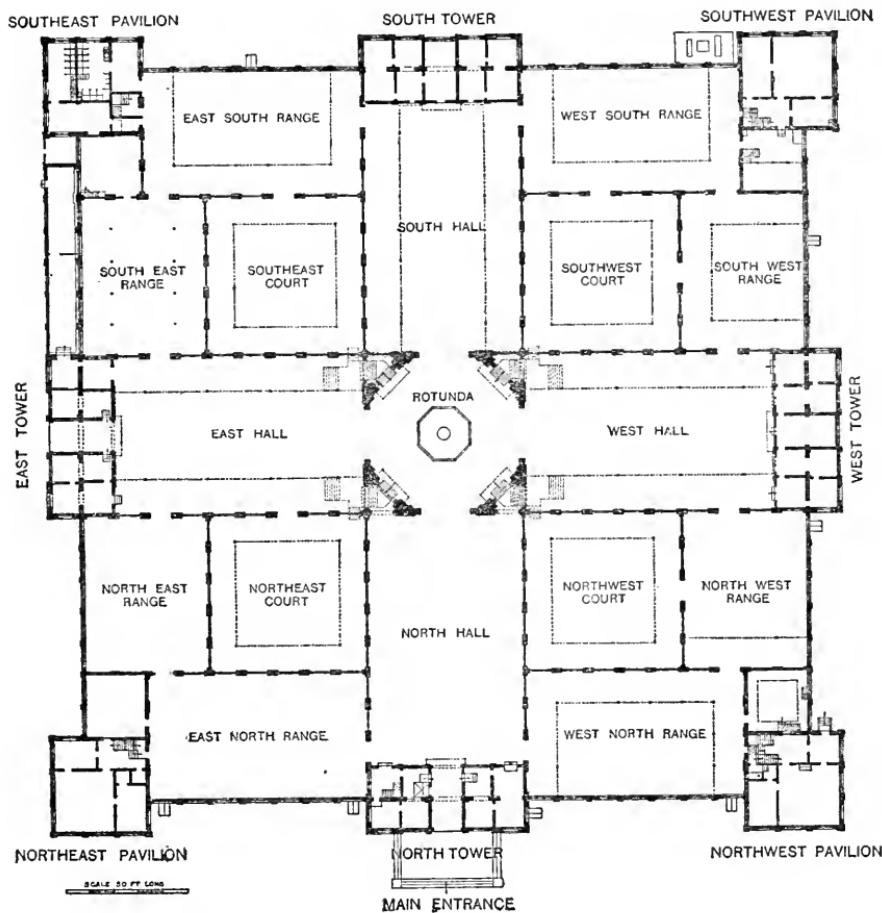
ranges, which, in conjunction with the former, inclose four covered courts. After the rotunda the naves have the greatest height, the courts coming next and the ranges last, in this respect. The ranges are lighted by large windows in the outer walls, as are also the outer ends of the naves. The naves otherwise and the rotunda and courts entirely receive their light from an abundance of clerestory windows. The illumination is therefore excellent, except for some interference on the floors through the introduction of galleries subsequent to the original construction.

This building stands southeast of the Smithsonian building, from which it is separated by an interspace of only about 50 feet, and its front or north face is about on the same line as the south face of the other. It covers a total ground area of 97,786 square feet, or about $2\frac{1}{4}$ acres. The towers and pavilions, which are three stories high and used for laboratories and offices, furnish 40,293 square feet of floor space; while the rotunda, naves, ranges, and courts, with such galleries as they contain, supply 103,195 square feet, or a little more than $2\frac{1}{2}$ acres, of space adapted to exhibition purposes. The towers were arranged so that each might furnish an entrance into the building, but only two have been so utilized—the north tower for the public and the east tower for official purposes.

The several subdivisions of the interior of the main part of the building are marked by rows of large brick piers, having a structural purpose in that they help to support the roofs, separated by wide openings terminating above in arched heads. As constructed, therefore, this interior was of the nature of a single room of exceptionally large dimensions. Exhibition cases placed between the piers have helped to fill in the interspaces, but with the object of securing better fire protection a large number of the openings have been built in with appropriate wall material, and this work is being further advanced from time to time.

The plan of the building is shown in the accompanying diagram, on which the subdivisions are designated in accordance with customary usage. The naves are called halls, but otherwise the architectural names are retained. The four halls—north, south, east and west—are much the largest of the subdivisions, and each measures about 102 feet 4 inches long by 62 feet 5 inches wide. The diameter of the rotunda corresponds approximately with this width. The northern and southern ranges are somewhat longer than the eastern and western, owing to interior extensions from the pavilions on the east and west sides of the building. The former measure about 89 feet 4 inches long and the latter about 63 feet 2 inches, the width of all averaging about 49 feet 9 inches. The courts average 63 feet square.

All of the subdivisions except the rotunda, the north hall, the east north, the north east, and the south east ranges are provided with galleries, the main entrance to which is from the rotunda. In the courts they occupy all four sides and are 10 feet 3 inches wide. Elsewhere they occur on three sides, except in the north west range, where only one side is so utilized. In the halls they range from



Floor and gallery plan. Older Museum Building.

13 feet 6 inches to 14 feet wide, and in the ranges are 12 feet wide. The south east range at the gallery height is entirely built over to form a complete second story. Although all of the galleries were planned for exhibition purpose and will eventually be so employed, a few have been and still are used as laboratories and for the storage of collections.

The floor plan, owing to the symmetry of design, makes every part of the exhibition space readily accessible to visitors, and communi-

cation from one part of the building to another is direct and unobstructed. All of the halls open broadly into the rotunda, and there is a continuous passage from range to range about the building. Only the courts are out of the beaten paths, and each has one or two entrances appropriately placed.

With this brief description of the building, we may proceed to an account of its present and prospective uses.

HISTORY.

The division of history, organized in 1881, was primarily designed to illustrate the history of the United States from colonial times by exhibiting such relics or memorials of noteworthy personages and events as could be brought together, with groups of objects representing different periods. Recently an American period costume collection has been added, which introduces a very striking and interesting feature; and to the division are also assigned the coins and medals and the paraphernalia of the postal service, the most important being the stamps, all of which relate to other countries as well as our own. While practically all of the memorials and costumes are displayed, the duplicate coins and medals and full sets of duplicates from the stamp collection are arranged as a reserve series for the use of students. Also filed in drawers and constituting a most valuable reference series are several thousand photographs and engravings of individuals who have gained more or less prominence in their respective pursuits.

Originally based mainly on loans, so large a part of the collection has become the property of the Museum that its permanency is fixed beyond question. Lenders, moreover, appreciating the protection assured their heirlooms, and actuated to some extent at least by patriotic motives, are not inclined to withdraw the objects belonging to them, and it is interesting to note the frequent changes during recent years from "loan" to "gift" of important articles that have been deposited.

Starting with the north hall as its sole exhibition space, which it shared with other subjects, the collections have grown so steadily that the division at present not only utilizes that entire hall, but has also gained possession of the west north and north west ranges and the floor space in the northwest court, with an aggregate of about 17,000 square feet of floor space.

MEMORIAL COLLECTIONS.

The general historical or memorial collections, constituting the most varied and popular section of the division and the most extensive as regards the area covered, occupy the north hall and west

north range, which are directly within the main entrance. The furnishings of the north hall consist of a continuous wall case on each side, 65 feet long, 8 feet high and 4 feet deep, and of many floor cases, numbering 56 at the close of last year. The type mainly used on the floor is the Gray pattern of the Kensington case, the remainder consisting of other patterns of the same and of various other types. These cases are arranged in two rows on either side of a wide passage leading from the entrance to the rotunda, but with some departure from the rule in places. In the west north range the cases are of several types, disposed in four rows—one on the north or window side and three on the south side of the principal passage, which extends from the main entrance to the northwest pavilion.

The collections contained in these two halls are especially rich in relics of American Army and Navy officers, including swords, uniforms, and other objects, which recall the names and services of their illustrious owners and illustrate the changes in fashion in these articles from the time of the Revolution to the present day. Next in importance of representation is probably the progress and attainments of science in this country, demonstrated by large numbers of medals and documents bestowed in acknowledgment of achievements, and personal articles of various kinds. Supplementing these is a large amount of material relating to the civil, domestic, economic, and art affairs of the country, interesting as typical of different periods and in many cases associated with some figure notable in connection with these phases of our history. Also included in the collection is an important series of historical maps, paintings and engravings, and many announcements of awards of honor and merit, commissions and diplomas.

In the arrangement of the exhibition it has not been possible to proceed on a thoroughly systematic basis. The limitations of space would alone prevent this, and the conditions accompanying loans generally require that each be displayed as a whole. Moreover, the collection is being added to so often and so extensively that each new acquisition would require an entire shifting of cases and the reinstallation of some of them, and even under the method followed this has to be done to a greater or less extent from time to time. With a sufficient amount of space and number of cases and the absence of any restrictions, a much better and more comprehensible installation could be made, and this desirable result, it is hoped, may some time be possible of attainment. The present basis of arrangement is mainly the individual collection, each series of objects relating to a particular person being, as far as possible, kept intact and the articles in each placed near together. With these conditions fulfilled, and in view of the limitations referred to, the order

is essentially chronological. The position of collections must, however, in many cases be determined by their size and their timely interest to the public, and some of them consist of a great diversity of material, representing considerable periods of time. In this connection more than a general account of the collections, with some references to their more important features, is impossible.

North hall.—The two large cases on the sides of this hall, heretofore occupied by the collection of musical instruments which has recently been removed, will be used for historical furniture, though there are many pieces installed in connection with individual exhibits where they will remain. Among the extensive material to be drawn upon for these cases are chairs, tables, and various other articles, and among the historic names represented are Lafayette, Thomas Jefferson, Brig. Gen. Rufus Putnam, Alexander Hamilton, Chief Justice John Marshall, Col. Peter Gansevoort, and Col. John Cropper of the Continental Army. It is also proposed to decorate the upper part of the cases with a series of historical paintings and engravings.

Suspended in the wall case on the right, awaiting accommodations by which a greater extent of its expanse may be displayed, is one of the most precious and valued of all the possessions of the Museum. This is "The Star-Spangled Banner" of Fort McHenry, the inspiration for Francis Scott Key's immortal verses, which, retained by Maj. George Armistead, its defender, has, through the generosity of his grandson, Mr. Eben Appleton, become the property of the Nation. An account of the steps recently taken to secure the perpetual preservation of this flag is given in another part of this report.

Taking up now the cases on the floor, one finds that the row on the extreme left is devoted mainly to the colonial period and the time of the American Revolution. Two cases are filled with colonial relics, including silver, glass, china, fabrics and articles of personal wear, many connected with prominent personages, deposited by the National Society of the Colonial Dames of America; and two others with similar objects of a somewhat later period, deposited by the National Society of the Daughters of the American Revolution. In the same series additional miscellaneous memorials of the Revolution, including a flag, a number of presentation and service swords, silverware and other objects, are likewise contained in two cases, in one of which is also installed a set of rare china purchased in 1790 by Dr. David Townsend, of Massachusetts, an original member of the Society of the Cincinnati, each piece bearing the insignia of the society, and the set being accompanied by Dr. Townsend's diploma of membership, signed by Washington as president of the society. Next comes a printing press that was used by Benjamin Franklin in 1725-1726,

when a printer in London, followed by a collection of special note, consisting of a number of military and civil costumes, swords, portraits and other relics of Brig. Gen. Peter Gansevoort, United States Army, relating to his career when, as a colonel in the Continental Army, he figured prominently in the campaigns against the British in the Colony of New York. Included in this exhibit are also memorials of Gen. Gansevoort's son, who fought in the War of 1812, and of his grandson, who attained the rank of brevet brigadier general of volunteers in the Union Army during the Civil War.

Models of five vessels connected with the discovery and early history of America are next in sequence. They represent a viking ship, such as that in which the Norsemen are believed to have visited this continent about 1000; the *Santa Maria*, flagship of Columbus; the *Susan Constant*, which brought the first permanent English colony to America; the *Mayflower* of the Pilgrims; and the United States frigate *Constitution*. The two remaining cases in this row are devoted, respectively, to the War of 1812 and the War with Mexico. In the first, among other articles, are a gold-mounted sword presented to Maj. Gen. Jacob Brown by the Legislature of New York, in recognition of his services during the battles of Chippewa and Bridgewater on July 5 and 25, 1814; a similar sword presented to Maj. Gen. Eleazer W. Ripley for his services during 1812-1814; a number of swords and pistols found on the battle field of New Orleans; and a silver service of five pieces given to Capt. James Lawrence, United States Navy, by the city of Philadelphia, in acknowledgment of his capture of the British brig *Peacock*. Most noteworthy in the second case are two gold-mounted swords, one set with jewels, presented to Maj. Gen. James Shields by the States of South Carolina and Illinois, respectively, in recognition of his services during the War with Mexico; swords of the same character presented to Brig. Gen. Gabriel R. Paul and Brig. Gen. George W. Morgan; a sword and silver pitcher presented to Maj. Gen. John B. Magruder; a gold medal awarded to Brig. Gen. William H. Browne by the city of New York; two United States volunteer regiment flags of the period and a Mexican flag captured during the war, besides a number of miscellaneous articles, including swords, silver-mounted pistols, and uniforms worn at that time by United States officers.

The adjoining row of cases, that facing the main thoroughfare on the left, contains relics of three classes. The first consists of objects of the nineteenth century, including a number of valuable jewels and other articles given to the United States in 1841 by the Imam of Muscat, and personal relics of various individuals, including Alexander Macomb Mason Bey and Mr. S. F. B. Morse. The second comprises memorials of prominent military and naval officers

of the United States, consisting mainly of jeweled, presentation and service swords, dress and service uniforms, etc. Among the Army officers represented are Maj. Gen. Alexander Macomb and Maj. Gen. Winfield Scott Hancock; among the Navy officers, Stephen Decatur, M. C. Perry, James Biddle, David D. Porter, David G. Farragut, Charles Wilkes, and John W. Philip. The third class comprehends a large and rich series of awards of merit and honor, including decorations, many of which are of great value both artistically and intrinsically. The important and varied collection bequeathed by Prof. Simon Newcomb, United States Navy, fills four cases; while the medals awarded to Commander Matthew Fontaine Maury, United States Navy, for his services to science and navigation, number 21. Also installed in this class are a gold snuffbox set with diamonds and a number of gold medals awarded to Joseph Francis in recognition of his services to humanity for his invention of the life-saving car; and many medals, decorations, and other forms of award conferred on American men of note, among whom may be mentioned Commodore John Rogers, Brig. Gen. M. C. Meigs, Alexander Macomb Mason, Hon. S. S. Cox, Prof. Alexander Dallas Bache, and Prof. Spencer F. Baird. A single case is occupied by the exceptionally large and artistic collection of gold and silver medals and other awards to Rear Admiral Robert E. Peary, United States Navy, in recognition of his polar explorations.

The first case from the entrance on the right of the main thoroughfare contains the few memorials of Lincoln possessed by the Museum, including the casts of his face and hands made by Leonard W. Volk, of Chicago, in 1860. In four adjoining cases is displayed the notable collection of relics of Gen. Ulysses S. Grant, which came mainly to the Museum in 1886 as a gift to the Government from Mrs. Grant and Mr. W. H. Vanderbilt. Of extreme value intrinsically, artistically, and for the wide range of countries represented, as it contains the many presents made to Gen. Grant during his world tour in 1877-1879, as well as at home, in recognition of his distinction as soldier and statesman, it is one of the largest and most important individual features of the division. Conspicuous among the articles are a large number of presentation and service swords, pieces of china, bronze, gold and silver ware, gold and silver medals, and other objects of art interest; several pieces of Chinese and Japanese bronze and porcelain, a set of modern Japanese gold and silver coins, and ancient gold medals, presented by the Emperor of Japan; and handsomely designed gold and silver caskets representing the freedom of several English cities. Associated with this collection is the series of beautiful and costly objects given to Mrs. Grant when abroad with her husband, and after her death donated in her name by her

children; while belonging with it are many documents in the form of Gen. Grant's Army commissions, honorary diplomas, addresses, etc., which are installed in cases more appropriate for them in the west north range. In a case near his father's are uniforms, swords, and other interesting articles of Maj. Gen. Frederick D. Grant, connected with his campaigns in Porto Rico and the Philippine Islands, followed by memorials of the same type relating to Gen. Sherman and Maj. Gen. Judson Kilpatrick. Other Civil War figures represented in the western section of the hall and also partly in the range are Maj. Gens. C. C. Washburn, George A. Custer, W. S. Harney and Thomas Swords; Brig. Gens. William B. Hazen, William Henry Browne, James B. McPherson, George W. Morgan, Gabriel R. Paul, Strong Vincent and John W. De Peyster; Flag Officer Andrew H. Foote; Col. E. E. Ellsworth and John Brown.

There are also many additional relics of the Civil War period, notable among which are a chair, secretary and table from the room in the McLean house at Appomattox, where the articles for the surrender of the Army of Virginia in 1865 were agreed upon by Gens. Grant and Lee, and a tree trunk severed by bullets at the battle of Spottsylvania Court House, Va., on May 12, 1864. The memorials of the Confederate States Army fill only a single case, as, unfortunately, it has been impossible to obtain a better representation.

At the end of the hall, adjoining the rotunda, is a large and valuable collection of memorials of Rear Admiral Winfield Scott Schley, installed in two cases and comprising uniforms, presentation and jeweled swords, gold and jeweled medals, a silver service and other objects, mainly gifts in recognition of achievements during his long service in the Navy, actively terminating with the War with Spain. Close by are two other cases devoted to miscellaneous relics of the Spanish War, including a number of captured Spanish flags, swords and guns. A large case near the middle of the hall is especially noteworthy as representing the personal side of a single family, the Bailey-Myers-Mason, for a period of about a century, its contents consisting of costumes, swords, silverware, porcelain, and many rich and jeweled objects of domestic interest. Adjoining are four exhibits illustrating the scientific work and inventive genius of Prof. Joseph Henry, Mr. S. F. B. Morse, Mr. Cyrus Field, and Dr. S. P. Langley.

In the rotunda are a number of Spanish guns captured in 1898, numerous reliques from the wreck of the battleship *Maine*, and a bronze cannon and carriage brought to this country by Lafayette in 1777 and used by the allied French and Continental forces in the War of the American Revolution.

West north range.—On entering the range one comes immediately upon the memorials of Washington, which are installed in seven cases adjoining the passage on the left. Consisting chiefly of the collection purchased by the Government in 1878 from the heirs of Mrs. Lawrence Lewis, subsequent additions from other sources have increased the number of objects to about 400. While composed largely of articles of domestic and artistic interest from Mount Vernon, the collection also includes important relics of Gen. Washington's life in the field during the War of the American Revolution. Among the former are silver, china and glass ware, typical of the period they represent, chairs, tables and mirrors of antique design, a copy of Houdon's bust of Washington, miniature portraits of Gen. and Mrs. Washington by Trumbull, and several personal objects which had belonged to them and to Nelly Custis. Among the latter are the tents and camp chest with mess utensils used by Washington, and also the Continental uniform he wore when he resigned his commission as commander in chief before Congress at Annapolis, Md., December 23, 1783. In one of the cases of the series is a collection of Lowestoft china and cut glass used at Mount Vernon about the close of the eighteenth century and bequeathed by Mrs. Washington to her granddaughter, Eliza Parke Custis.

Arranged in four cases near by is a large collection of domestic objects, such as costumes, textiles, china, glass and miscellaneous articles, representing the Copp family of New England in the colonial and Revolutionary periods. Five cases at the inner end of the range contain medals, pieces of silver, a fine malachite case, handsomely bound volumes and pictures dealing with Russian history, art and other subjects, presented by Emperor Alexander II of Russia and various Russian societies and individuals to Gustavus Vasa Fox on the occasion of his visit to Russia in 1866, when, in appreciation of its friendly attitude toward this Government during the Civil War, he was sent by Congress as a special envoy to personally congratulate the Emperor on his escape from assassination early in the same year. The collection also includes a number of congratulatory letters and addresses of welcome received by Mr. Fox during this mission. Among the numerous other exhibits in the range are memorials of Dr. William T. G. Morton, who demonstrated the art of surgical anaesthesia; of Joseph Wharton, who was among the first to establish the manufacture of nickel in the United States; and of Gen. José Antonio Paez, the Venezuelan patriot and minister to the United States in 1860-61. Three cases contain miscellaneous relics of the early part of the nineteenth century, including jewelry, textiles, china, etc.; and in a single case is displayed a collection of swords illustrating the types of this weapon used in

the United States Army from the time of the Revolution to the period of the Civil War, supplemented by a number of English, French, and Spanish swords, some of the last named dating back to the sixteenth century.

In a series of cases adjoining the window side of the range are exhibited, among other articles, mainly documentary, the commissions of Gen. Grant, Gen. Sherman, Maj. Gen. Thomas Swords, and Brig. Gen. George W. Morgan; diplomas and other honors conferred on Dr. S. P. Langley, and medals and diplomas awarded Prof. George F. Barker, for their services to science; and a miscellaneous collection of historical documents, plans, and maps. Adjoining the opposite or south wall is a row of similar cases containing the David W. Cromwell collection of postage stamps, which is exceptionally large and valuable, and representative of foreign countries as well as our own. On the walls other than that occupied by the windows are hung paintings of historical personages, and engravings and other prints illustrating noted scenes and landmarks in United States history.

PERIOD COSTUMES.

There was opened to the public on February 1, 1914, a collection of feminine import, which is quite unique for this country in its largeness of scope and in part at least for its method of presentation. With few exceptions this assemblage is illustrative of the fashions of the women of the United States from colonial times, including all manner of accessories and embellishments, and the articles of their particular sphere in the home life.

The first suggestion was for such a presentation of changes in fashion as could be made by a display of costumes worn by the successive mistresses of the White House, each so draped as to bring out the full effect of the gown when upon the wearer. The task proved doubly difficult, first in securing the material desired and second in producing a lay figure or manikin sufficiently dignified and pleasing to be associated with such surroundings. A considerable delay, therefore, ensued, but 15 gowns, representing as many presidential administrations, have now been obtained, and a series of experiments has resulted in the production of a manikin which leaves nothing more to be desired in that respect. During the progress of this work, moreover, the scope of the collection was enlarged to include other costumes and other articles, installed in a more conventional way, as described below. While there is practically no limit to the extent to which such an exhibition could be carried, the restrictions in the matter of space make necessary a careful discrimination in determining which of the many offers of material should be accepted, the

intention being to round out the subject with as little duplication as possible.

The collection is, of course, confined to the period of civilization in this country. Back of it is the ethnology of the American Indian, but between is a considerable number of years which are not represented, since the earliest costume it contains dates no further back than the middle of the eighteenth century. It is hoped that this gap will not remain without at least some illustrations. The costumes that have been assembled do not include those of the lowly, but belong entirely to at least the well to do, and mainly to the wealthy and distinguished, the classes to which the term "fashion" seems solely to appertain. With these classes, therefore, have also originated the changes in fashion, which, with the growth of the collection, are discovered to be more distinctive, more progressively varying, and more instructive than had been anticipated. For the study of this, the historical, side of the subject of American costumes, the collection, small as it still is, furnishes excellent material, as it also does for the study of American history in general by its representation of so many persons of notable connection with the affairs of the country.

For the inception of the collection, for the plan of its composition, for the assembling of its innumerable parts, and for its installation acknowledgments are due to Mrs. Julian James, of Washington, who has had the constant hearty cooperation of Mrs. R. R. Hoes and the help and advice of many other ladies of the Capital City. Upon Mrs. James and Mrs. Hoes, however, has almost wholly devolved the work of bringing together the costumes and other articles, which include many contributions from their own stores of heirlooms, and of preparing and arranging them for exhibition. The task has been especially arduous, as the materials had to be sought in many places and were mainly acquired through their personal efforts. Their part, moreover, has been entirely a labor of love, and has been conducted with a zeal and devotion which could not but insure success. And so with inconsiderable expense to the Museum has been added a section of great importance, of extreme interest to the public, of high intrinsic value, attractive and pleasing, but at the same time classified and arranged in accordance with museum methods, and for a comparison with which one finds nothing in this country and little in Europe.

The space occupied by the period costume collection is the north west range, which is most easily reached from the main entrance by passing to the right through the smaller hall of history. There is also another opening from the west hall and communication with the northwest court. The range measures about 63 by 50 feet, and has a sloping ceiling which varies in height from 26 to 31 feet.

The direct lighting is wholly from the west, where the outer wall is pierced with five large windows, provided with heavy curtains to protect the delicately tinted fabrics against fading. The walls and ceiling are uniformly of an old ivory tint, and the only decoration on the former, hung high above the cases, is the celebrated painting by Henry Sandham, entitled "The March of Time," representing a review of the Grand Army of the Republic in Boston Common, in which the faces are mostly portraits of prominent officers and women of the Civil War.

The furnishings of the range are varied though not inharmonious. The White House costumes are in large rectangular cases, with ebonized frames and polished hardwood floors, which generally measure 5 by 8 feet square and 8 feet high. Each contains a single figure, except one in which two have been installed. The 14 cases now provided are in two rows, 8½ feet apart, the intervening space serving as the main thoroughfare through the range from north to south. Filling each of the broad interspaces between the piers on the three inner walls, except at the three openings, is a standard alcove case, which in appearance and purpose is the equivalent of a wall case. In front of the piers, with one exception, are placed smaller cases, six of the single lay figure pattern and three of about the same height but somewhat wider. The entire space below the windows on the west wall is occupied by a single sloping table case with an upright back fitted with shelves. The remaining space, that between the above-mentioned case and the nearest row of White House figure cases, is used for a series of six American cases arranged crosswise. These consist each of two sections of the floor type of sloping top, placed back to back, with a small rectangular upright case between and above them.

Lay figures, as before explained, have been employed only for the White House costumes; and after several attempts to avoid the appearance of the commercial manikin so often seen in store windows, recourse was had with entire success to the methods employed in producing the ethnological groups in the Museum. This meant a greater expenditure of time and labor than had been intended and a considerable delay in beginning the installation, but the results have more than justified this course, the presentation of this part of the collection being exceedingly dignified and wholly commendable. The heads, shoulders, arms and hands—the only exposed parts—are in plaster, the remainder of the construction being of wood and metal. The work is sculptural, but the delicate ivory tint given the plaster removes all sense of coldness and produces a harmony with the drapery that results in a remarkably pleasing effectiveness. A portraiture of any of the faces has not been attempted;

all are alike and are copied from a classic statue. The coiffure, usually with its ornaments, if any are shown, is molded, and is based upon a picture of the person represented or upon the style of the time to which the costume belongs. The differences which these produce, together with changes in pose, all tend to obliterate the effect of uniformity in facial features, and give to each head the impression of separate design. Neck ornaments are equally in plaster, and the arms are molded from living models, including the gloves, where they are worn. The draping has been well and tastefully done and the effects are unusually realistic, most markedly so in certain of the figures where the conditions were most favorable. The plaster work has been executed by Mr. H. W. Hendley, formerly of the Museum staff, under the direction of Mr. W. H. Holmes, while the dressing of the figures has been done by Mrs. Julian James and Mrs. Hoes, or under their supervision. In addition to the figures each case also contains one or two pieces of furniture, such as tables and chairs, and one or more other small articles having some relation to the administration represented. These give a more finished appearance to the cases and add to the historical interest of the collection.

The 15 presidential administrations illustrated are as follows: George Washington, 1789-1797; John Adams, 1797-1801; James Madison, 1809-1817; James Monroe, 1817-1825; Andrew Jackson, 1829-1837; Martin Van Buren, 1837-1841; William Henry Harrison, 1841; John Tyler, 1841-1845; James K. Polk, 1845-1849; James Buchanan, 1857-1861; Ulysses S. Grant, 1869-1877; Rutherford B. Hayes, 1877-1881; Benjamin Harrison, 1889-1893; William McKinley, 1897-1901; William H. Taft, 1909-1913.

The first of these administrations is represented by Mrs. Martha Washington, who is seated in one of her own chairs, by the side of a Mount Vernon table, on which is a Washington silver platter containing a tea cup and saucer given her by the French officers, a decanter and glass, and a Lowestoft bowl. The gown which she wears is of silk rep, of the old-fashioned salmon pink color, and is made of many straight widths, pleated on a bodice slightly pointed front and back. The entire dress is hand painted in a brocade design, in imitation of purple ribbons artistically entwined and caught in loops, producing a repetition of larger and smaller rounded spaces, the former containing small nosegays, the latter, insects and other small animal forms, all done in their natural colors. There is a lace cap on the head and an embroidered linen shawl about the shoulders. The hands, in silk mitts, hold a workbag, on which is embroidered "Mrs. M. Washington" in gold, surrounded by a wreath of flowers in bright colors. While recognizing the futility of comparisons, this figure would seem to be the most realistic of the group, and, though

presenting the earliest of the wives of Presidents, also the one most readily identified, probably because of our long acquaintance with the portraiture of this first lady of the Republic, which has been successfully reproduced.

Mrs. John Adams, the wife of the second President, is shown in a dress of puritanical simplicity, made of plum-colored Chinese crêpe embroidered with silk, and having a straight full skirt and long puffed sleeves. A lace shawl, a fan, a pearl necklace, and yellow kid slippers complete the costume. The wife of James Madison, best known as Mrs. Dolly Madison, is very effectively presented in the dress used by Mr. E. F. Andrews for the portrait well known to Washingtonians. The costume belongs to the early Empire period. The short-waisted basque and the overskirt, which ends in a flowing train, are of light yellow satin brocaded with many bunches of silver wheat. The overskirt, edged with Valenciennes lace, is draped over a white satin underskirt embroidered in pink roses, blue morning-glories, and white cherry blossoms. The sleeves, of gauze, are short, and a large lace fichu is thrown over the shoulders. In the right hand is the traditional book, which in this instance consists of a copy of *Paradise Lost*, published in 1812.

Search for a dress of Mrs. James Monroe having proved fruitless, a gown of the period imported from France in 1824 for the first bride of the White House, Maria Hester Monroe, the youngest daughter of the President, has been substituted. This dress, fashioned in Empire style, is of pale blue silk, is made with the Watteau pleated back, and the basque, which laces in front, has a decidedly long-waisted effect. The sleeves, which are short, are of blue tulle and blue and yellow ribbon knots. The skirt is in two wide flounces and, together with the waist, is embroidered and scalloped with straw in a conventionalized bearded-grain pattern. But 16 years of age when married to Samuel Laurence Gouverneur, the bride holds in one hand a lace handkerchief and silver vinaigrette. She is standing by the side of a chair and table, brought from France in 1796 by James Monroe, on the latter of which is an old-fashioned mirror made from a fragment of larger glass, a relic of the burning of the White House in 1814, a superb ivory and silver fan, a silver pitcher and creamer, and a small cup decorated with an eagle surrounded by 13 stars, which is supposed to be the only piece of Monroe china now in existence.

Lacking material for the administration of John Quincy Adams, the three which succeeded his are represented as follows: Andrew Jackson by Mrs. Jackson's niece, Mrs. Andrew Jackson Donelson, who presided over the White House during his term of office, and whose costume consists of a bodice of old gold flowered brocade and

an overskirt of blonde lace over a yellow satin skirt. Martin Van Buren by his daughter-in-law, Mrs. Sarah Angelica Van Buren, wife of Abraham Van Buren, in a striking, almost regal, rich dark-blue velvet train dress, and wearing also a lace fichu. In her right hand is a handkerchief embroidered with her maiden name, "S. A. Singleton," and in her left hand she holds a fan bearing her monogram, "A. V. B." William Henry Harrison, during his very short term, by Mrs. Jane Irwin Findlay, wife of Gen. James Findlay and aunt of Mrs. Harrison, in a simple low-necked dress of a dark mole-colored velvet, with the very long and large puff sleeves of the period of 1841.

The first presidential bride, Mrs. Julia Gardiner Tyler, wife of John Tyler, is gowned in a dainty creation of cream-colored gauze, first worn at her presentation at the Court of Louis Philippe. The skirt is very full and in three flounces, each of which has three rows of silver tinsel and two of embroidery, the latter being of bright flowers presenting all the colors of the rainbow. At the waist line there is a belt of the same material. The sleeves are short and the neck is V-shape, leaving the throat exposed. Over the shoulders is a lace shawl. Mrs. James K. Polk is presented in a magnificent gown made by Worth for the Polk inaugural ball, a beautiful azure-tinted brocaded satin, into the fabric of which the Christmas flower, the Poinsettia, is woven in silver-grayish tints. It has a full straight skirt with front panel of plain satin of the same shade and tight pointed bodice, low neck, and full puffed quarter sleeves. The bodice and sleeves and the skirt are trimmed with blonde lace, and six large bows of ribbon also adorn the front of the latter.

Another bride of the series is Mrs. Harriet Lane Johnston, niece of President Buchanan and mistress of the White House during his administration. The figure is clad in the gown worn by Miss Lane at her wedding to Henry Elliot Johnston, a superb ivory moire antique silk, made with flowing skirt, the wedding veil being thrown gracefully over the shoulders. The skirt has the voluminous proportions of the period when hoops were worn, and the hem is tabbed. The bodice, which is laced in the back, has a straight low neck and very short sleeves. It is trimmed with lace and a folded band of white satin passes through loops entirely around the upper part. This figure has a particular interest to the Museum, as it was through the generous bequest of Mrs. Johnston that the National Gallery of Art secured the nucleus which has led to its active growth.

It was said by a contemporary writer that during the period of the Grant administration the dresses seen were magnificent beyond precedent. The dress by which Mrs. Ulysses S. Grant is represented would seem to confirm this opinion. It is a heavy rich silver brocade,

the material of which was made in China. The skirt is cut straight and slightly pleated. The waist, which is quite low in the neck, has very short sleeves and a postilion back. A point lace cape covers the shoulders. The dress of Mrs. Rutherford B. Hayes is the one in which she appears in the portrait by Daniel Huntington now in the White House, and was first worn at one of her public receptions. It is of garnet velvet. The bodice has silk panels, a postilion back, tight sleeves, and lace collar and cuffs. Passementerie and brocade panels hang on either hip, and the train is of silk trimmed with strips of velvet. Mrs. Benjamin Harrison is shown in a rich gown, a combination of yellow satin and magenta brocade, with a sweeping train. The bodice has a V-shape neck and elbow sleeves. The side front of the gown is a panel of yellow satin, embroidered with gold passementerie. A gold cord edges the bodice and falls down in front terminating in tassels.

The dress of Mrs. William McKinley is of cream satin, with a long, full train. The high-necked waist is decorated with pearl passementerie, and the sleeves are of the mousquetaire style. The front panel of the skirt is embroidered in pearls and brilliants, and bordered on each side by deep d'Alençon lace, the hem being slashed into lappets edged with tulle. The high laced boots are of the same material and are embroidered to match. This costume was worn by Mrs. McKinley at the inaugural ball of March 4, 1901. The most recent of the costumes is the inaugural gown of Mrs. William H. Taft, a splendid creation of chiffon, embroidered in white floss, rhinestones, and silver crystal beads. It is low cut, with short sleeves, and has a very long, full train.

For dresses other than those in the White House series, four of the alcove and three of the single lay figure cases are now being used. Earliest in date of the apparel here displayed is a quaint colonial gown which belonged to Mrs. Cornelius Wyncoop as early as 1760. Following is a dress worn by the wife of Capt. Miles King, of the Revolutionary Army and later mayor of Norfolk, at a ball given to Lafayette, at Norfolk, Va., and another beautiful silk brocade of the same period. Especially notable is a golden-yellow robe made about 1784 for Mrs. Eliza Lucas Pinckney, one of the most distinguished of South Carolina women, the wife of Colonial Chief Justice Charles Pinckney and the mother of Gen. Thomas Pinckney. It was she who introduced indigo culture into the State, and the material of this dress was the product of her own plantation, as she raised the silkworms and the silk was spun by her maids. The weaving of the beautiful brocade was, however, done in England, and there was enough material for three dresses, two of which were presented to notable personages of the mother country.

Next is the dress worn by Mrs. Richard Rush when presented at the Court of George III in 1817. It was her husband, then minister to Great Britain, who went to London in 1836 as special commissioner on behalf of the bequest of Smithson, which he brought back with him in gold sovereigns, and later he became a regent of the Smithsonian Institution. There is also another costume of the Rush family worn in 1817 and a mantilla of 1840. Among other gowns belonging to the last and the beginning of the present century are the wedding dress of the wife of Rear Admiral D. D. Porter, 1839; a dress of Miss Mary Catharine Bruyn, 1835-1840; the dress worn by Miss Helen Hovey at the ball given in Boston in 1860 to the Prince of Wales, with whom she danced; five beautiful gowns belonging to three generations of the Bailey-Myers-Mason family; a superb gown, a replica of one belonging to the Empress Josephine, worn by Mrs. Levi Z. Leiter at the Indian Durbar of 1903; two dresses of Mrs. Levi P. Morton and one of Mrs. John Hay; the dress worn by Mrs. Charles Warren Fairbanks, wife of the Vice President, at the inaugural ball on March 4, 1905; a coat and gown of cloth of gold which had belonged to Mrs. John R. McLean; two gowns of Mrs. George Dewey, one her wedding dress; a dress of Mrs. Henry Y. Satterlee, widow of Bishop Satterlee; and two costumes of the famous actress Charlotte Cushman, worn by her in her impersonation of Cardinal Wolsey and Catharine in Henry VIII.

In four of the single lay figure cases is displayed the attire of as many distinguished American men. One contains the uniform worn by Gen. Washington when, at Annapolis, Md., on December 23, 1783, he surrendered his commission as commander in chief of the Continental Army, and also one of his dress suits. In another is the stately coat worn by Gen. Thomas Pinckney, of South Carolina, when minister to the Court of St. James. In the third is the court dress of James Monroe worn during his second mission to France in 1803, together with a large number of other Monroe relics, including badges and ribbons of the French Revolution, two waistcoats, shoe and belt buckles, a medal, a spur, rapier, umbrella, razors and strop, and several letters, one of which announces his marriage. In the last is the uniform coat worn by Gen. Andrew Jackson at the battle of New Orleans, January 8, 1815, and his pistols and case.

Charming and dainty in their materials, their needlework, and their decoration are many baby dresses of the styles of 1800, 1817, 1825, 1849, 1852, and 1859, displayed in a special case, among them being some rather elaborate christening robes and caps, as well as other articles of infant apparel.

Filling three of the alcove cases is a valuable collection of Cashmere and embroidered China silk or India shawls, including a num-

ber of exceedingly choice examples. While partly composed of loans, the majority of the specimens are the property of the Museum, the entire contents of one of the cases having, in fact, been received by the Government in 1841 as a gift from the Imam of Muscat, Arabia, together with many other beautiful and costly presents. A fine Cashmere shawl which belonged to Mrs. John E. McElroy, sister of President Arthur, is exhibited in the Hayes case.

The remainder of the costume collection fills the six American cases and the sloping part of the long wall case below the windows with a very great variety of articles, in some respects no less interesting than those already reviewed. It comprises parts of costumes, accessories of apparel, and the myriad objects associated with the daily life of woman. These are mostly heirlooms, treasured for their associations, for their beauty and daintiness, or for their costly and exquisite craftsmanship. The arrangement, though mainly by family grouping, is artistic and tasteful, and the general effect is of elegance and refinement. Summarizing briefly, we find many lace and other articles pertaining to dress, including a beautiful piece of piña work; handkerchiefs of lace and fine linen; gloves and mitts, with their embroidered containers; calashes and bonnets; hairpins and superb tortoise-shell combs; fans of exquisite make and embellishment; ornamented housewives and workbags, with sewing and knitting materials; pincushions, aprons, slippers, buckles, and toilet articles; numerous small and dainty ornaments of the boudoir; calling card and snuff boxes, opera glasses, lorgnettes, umbrellas, parasols, etc. Most resplendent is the display of jewelry, from antique to modern make, of endless variety, and including much of exceptional richness in material and workmanship. In one of the American cases are dainty lots of exquisite needlework and other family relics, showing the great taste with which our ancestors provided articles for their personal use. In the long wall case is contained a collection of colonial costumes illustrating the type of clothing worn by men on ordinary and dress occasions from 1700 to 1800, formerly the property of the Smith family of the Colony of Maryland; relics of colonial and early nineteenth century times in Philadelphia; dresses and jewelry of an early period from Kingston, N. Y.; and laces and lace costumes, fans, China and India shawls, jewelry, etc., from several sources.

Installed in the upright part of the western wall case and in three adjacent alcove cases is the historical collection of American china, assembled by the late Rear Admiral F. W. Dickins, United States Navy, and deposited by Mrs. Dickins, which was fully described in a previous report. It is especially notable for its relation to important periods and for the number of White House pieces which it contains.

Although not a part of the costume collection, it supplements it in a commendable way and adds to the attractiveness of the room.

COINS, MEDALS AND POSTAL TOKENS.

The northwest court is assigned to these subjects and also to the assemblage of musical instruments, the latter displayed in the wall cases, on the tops of which a large number of plaster busts of historical personages have been arranged. From the entrance, which is on the west side, a broad passage leads eastward through the court, and is flanked in the middle by two large upright cases for the stamp collection. The remainder of the floor space, partly abutting on the passageway, is occupied by table cases of several patterns, in which the coins and medals are installed.

Coins and medals.—The coins and medals, aggregating over 6,000 specimens, exclusive of the many and varied examples of the latter in the memorial section and those in the reserve series, were installed during the year. They had previously been in storage, accessible only to students, and their preparation for this purpose involved considerable labor, since it was necessary to reclassify the entire collection, clean each individual piece, and select the best of them for exhibition. It was also required to fully describe the specimens in the card catalogue, which had not previously been practicable, and to prepare copy for the labels. Although the series is far from complete for any country, each nation is sufficiently well represented to indicate, in a general way at least, its numismatic history, and it is hoped that this public display will lead to the filling of many of the gaps. While no very rare pieces are to be found among the coins, the importance of this part of the collection resting upon its extent and comprehensiveness, the collection of historical medals is one of the best available to the public in this country, being probably surpassed only by those of the United States Mint at Philadelphia and the American Numismatic Society of New York. The exhibit is supplemented by 102 fine examples of small plaster bas-relief reproductions of ancient and modern works of art.

The installation occupies 27 flat-top cases, of which 8 are devoted to the United States and its possessions, 11 to European countries, and 8 to Asia and Africa. The series of United States coins begins with a number of originals and copies, showing the type of currency used in America during the colonial period. Massachusetts, the first Colony to strike its own coins, is represented by the two silver pieces known, respectively, as the "New England shilling" and the "Pine-tree shilling," both issued as early as 1652. Among other colonial tokens are the Maryland pennies of 1660 and several pieces of the Rosa Americana series made in England for colonial circulation dur-

ing the early part of the eighteenth century. Of the copper pieces of various designs issued by the individual States, and there passed as cents immediately after the Revolution, there are examples from Massachusetts, New Jersey, and Connecticut. Especially noteworthy is a copy of what is supposed to have been a pattern dollar struck in 1776, which bears on the obverse the inscription "Continental currency, 1776," and on the reverse the names of the thirteen Colonies on intertwined rings encircling the words "American Congress," "We are one." Many of the copper coins or tokens of this period have the head of Washington, with inscriptions relating to his career, and of this type the collection contains interesting examples. The colonial and Revolutionary series are followed by a nearly complete collection of copper and bronze pieces issued by the United States since the establishment of the mint in 1792, different kinds of the half-cent, cent, and 2-cent issues being shown. Among the nonofficial coins is displayed a fine series of the so-called "hard times tokens," which circulated largely during the Presidencies of Andrew Jackson and Martin Van Buren, 1833-1841. In the matter of silver and gold coins the exhibition is somewhat disappointing, but it contains one very rare specimen—the famous "Stella" or \$4 gold pattern piece of 1879. Terminating the United States series is a set of the somewhat crudely designed Hawaiian currency of 1883, consisting of four pieces—dime, quarter, half dollar, and dollar—and another of the far more artistic silver, nickel and bronze coins issued for use in the Philippine Islands, comprising the half-centavo, centavo, 5-centavo, 10-centavo, 20-centavo, half-peso and peso pieces.

The classification of the United States medals is under 12 heads, namely, (1) struck prior to the Revolution; (2) struck during the Revolution or shortly thereafter; (3) commemorating events of the Revolution but struck subsequently; (4) commemorating events during the quasi war with France and the War with Tripoli; (5) commemorating events during the War with Mexico, the Civil War and the Spanish-American War; (6) commemorating the various presidential administrations and for presentation to Indian chiefs in token of peace and friendship; (7) commemorating the services of individuals; (8) awarded by the Government in recognition of services in saving life; (9) issued by, or awarded to, well-known societies and institutions; (10) commemorating notable events from 1800 to 1900; (11) commemorating centennial and other celebrations; and (12) commemorating expositions and fairs. In each of these classes the arrangement is chronological except those relating to personal services, where it is alphabetical by the names of the recipients. The collection consists largely of bronze copies of gold medals which have

been presented to individuals for special services, and, representing many phases of United States history, it offers an excellent field for study.

The foreign coins and medals have been installed in geographical, alphabetical and chronological arrangement, the geographical being by continents in the following order, namely, Europe, Africa, Asia; and the alphabetical by countries in each of the continents, the colonies of each country, wherever situated, being associated with it.

The European collection begins with Austria, followed by Belgium, of which there are a number of interesting pieces relating to the stirring events of the Revolution of 1830. After Denmark comes the British Empire with an especially large representation. The coins of the Empire, including its possessions, fill a case, and succeeding them is an important series of English historical medals ranging from the sixteenth century to the present day. Especially noteworthy are the portrait medals of the sixteenth century and a handsome set of medals issued during the nineteenth century commemorating notable events in the history of the city of London. The coinage of France is poorly illustrated, but this is more than atoned for by the splendid series of French historical medals, the bulk of which belong to the Henry Adams and George Brown Goode collections, which compose, in fact, the greater portion of the foreign medal representation in the Museum, the former aggregating nearly 1,000 and the latter about 500 specimens. This series commences with comparatively recent issues commemorating the reigns of the French sovereigns from Pharamond, 420-428, to Napoleon III, 1851-1871, and is followed by miscellaneous medals relating to events from the reign of Louis XII, 1498-1515, to that of Louis XIII, 1610-1643. There is a nearly complete set of the medals struck during the reigns of Louis XIV, 1643-1715, and Louis XV, 1715-1774; and the thrilling period of the French Revolution from 1789 to 1799 is well represented by designs striking in character and import. The French medallie art of the early part of the nineteenth century is illustrated by a number of examples of fine medals struck during the reigns of Louis XVIII, Charles X, and Louis Philippe. Following these is a large number of portrait medals commemorating the careers of noted men of French history, statesmen, authors, and others.

Of Germany there is also an excellent presentation, beginning with the coins of the various independent States and continuing with those of the Empire founded in 1871, the arrangement of the medals being the same. Especially noteworthy is the series of commemorative coins issued by the sovereigns of Bavaria during the early part of the nineteenth century. The independent States and the Kingdom of Italy are similarly illustrated, and in connec-

tion with them is displayed a very large and fine set of papal medals, dating from 1192 to 1910. The coinage of the Netherlands, Norway, Poland, Portugal, Roumania and Russia follows, and of the coins and medals of Spain there is an exceptionally interesting series, including a large number of pieces struck for circulation in the Spanish-American countries. The European collection ends with some excellent examples of early and recent coins and medals of Sweden and Switzerland. Its greatest desideratum is of ancient Greek and Roman coins.

The Asiatic and African countries whose coinage is shown are China, Japan, Persia, Siam, Abyssinia, Algeria, Liberia, Morocco and Turkey. The Chinese representation is the largest, numbering over 2,000 pieces and covering the period from about 700 years B. C. to the present time. The bulk of this collection was a bequest from the late George B. Glover, and many modern copper pieces have been added by Mr. N. Gist Gee, of Soochow University, China. The Japanese series is also important; beginning with the sixteenth century, it is brought down to the latter part of the nineteenth century.

Postal tokens.—At the beginning of 1908 the subject of postage stamps was illustrated in the Museum by only a small miscellaneous collection of domestic and foreign issues numbering about 2,500 pieces, and it is interesting to note that the principal contributor had been Mrs. Spencer F. Baird. In the year named, however, through the munificence of Mr. David Cromwell, of New York, the Museum received an exceptionally fine series of about 20,000 specimens representing the United States and nearly all foreign countries. These stamps were almost without exception well preserved, uncanceled copies, which had been assembled by the collector with much care and at great pains, and were therefore especially suitable for public exhibition. Though lacking in many important particulars, this collection was installed as a unit in a series of cases designed for the display of manuscripts but well adapted to this purpose, which are located in the smaller hall of history, as already explained.

In 1912 the Museum obtained by transfer the more essential parts of the large exhibition of the Post Office Department, comprising as its most valuable and important feature the stamps, stamped envelopes, and postal cards of all the nations of the world, to the number of nearly 200,000, and since then there has been a constant accretion from the same source. The original collection consisted primarily of a large cabinet with sliding frames, in which the main series of stamps had been installed, including those printed for the United States by private firms from 1847, the date of the first Government issue, until 1894, when the work was taken up by the Bureau of Engraving and Printing, and the subsequent issues from this bureau;

the foreign stamps received through the International Bureau of the Universal Postal Union at Berne, Switzerland, and a number of early United States stamps specially purchased. Nearly all of these series, however, were incomplete. The remainder of the collection was composed of sheets of stamps, envelopes, and postal cards mounted on swinging screens for various American expositions; many separate sheets of stamps and individual specimens; and several albums of stamps and of die proofs of United States stamps.

The preliminary work of putting this collection in shape, consisting in the systematic arrangement of the material by countries and dates of issue, having been completed in the early part of last year, the problem of preparing an appropriate exhibition was then taken up. It was decided to limit the display in the beginning almost exclusively to stamps, and, drawing first upon the resources of the collection from the Post Office Department, to leave spaces during the mounting for the desiderata which would be supplied as opportunities offered.

There have been many methods of exhibiting postage stamps, but it is believed that the scheme here adopted is an improvement over any other, especially in the matter of details. The principle is the same as that followed by the British Museum and is exemplified in the former cabinet of the Post Office Department, namely, a series of vertical sliding frames in which the specimens are mounted. The cabinet that has been built and in which the installation is in progress, though already made accessible to the public, may be briefly described as follows: There are two cases, each 16 feet 2 inches long, 6 feet 7 inches high, and 2 feet 8 $\frac{1}{2}$ inches deep, constructed each in two sections for convenience in moving. They are made of mahogany with simple trimmings on the outside, but of white pine in the interior except as otherwise stated, and are placed facing each other on either side of the main passageway in the northwest court. The lower part of the cases is arranged for storage and provided with doors. The upper part, measuring 3 feet 2 $\frac{1}{4}$ inches from a counter shelf to the top of the cornice, contains the sliding frames, of which there are 148 in each case, or 296 in all, a number that may of course be at any time increased by adding to the case length.

The individual frames, made of cherry, measure 31 $\frac{1}{4}$ inches high by 29 $\frac{1}{2}$ inches deep on the outside, and 27 $\frac{1}{2}$ by 21 $\frac{1}{2}$ inches in the opening. The thickness of the frames is 1 $\frac{3}{16}$ inches, and when fully drawn out they are exposed to a depth of 23 $\frac{3}{8}$ inches, with an extension into the case of 6 $\frac{1}{4}$ inches, which provides the necessary leverage. Both sides are used and are glazed with English negative glass. The frames slide on cherry strips and the upper and lower rails of the former are grooved to within an inch of the front. In the lower groove are mortised four brass trunk rollers projecting one-eighth

inch to raise the frame above the strips, but the upper groove contains only one such roller, placed about 1 inch from the back of the frame to prevent friction as the frame is started. On the front edge of each frame is a bronze-finished bar drawer pull, a label holder, and a numbered disk. The frames are doubly secured in the case by a hinged cornice at the top and a wooden flap at the bottom, which are fastened by locks at the ends. They are released for inspection by unlocking the flap, being stopped at the proper place by a square strip of wood attached at the top, and may be wholly removed by also throwing the cornice back on top of the case. Still other attachments give greater refinement to the mechanism of the case in several ways.

Summarizing the principal merits of these cases, especially with reference to their use by the public, it may be said that the frames run so smoothly that they are instinctively pushed back into place, which is an important matter as operating against an unlimited exposure of the stamps and their consequent more rapid fading; while, furthermore, the frames are all in a single row and center at a height of about 4 feet 10 inches above the floor, which places each mounting easily within the range of vision of the ordinary standing visitor.

The stamps are mounted on quadrillé paper, which is supplemented in each face of the frames with a mat having four quadrangular openings, the stamps being appropriately grouped for this arrangement, which greatly adds to the appearance of the installation. Between the two mountings is a sheet of one-fourth inch compressed filler board. The labeling of the individual stamps has gone forward with their mounting and is done directly on the quadrillé sheets by means of a typewriter having gothic type. The results are very satisfactory in effect and much more durable than by attaching the many thousands of separate printed labels that would otherwise have been required. There remain to be added the general printed labels, one on each frame face giving the name of the country represented, and one on the front edge of each frame indicating the scheme of arrangement.

The installation of the collection, instead of according with the usual stereotyped alphabetical arrangement throughout, agrees practically with that of the coins and medals, and therefore begins with the United States, followed by the foreign nations in alphabetical order, the stamps of the colonies being grouped together geographically under each respective mother country. It is ultimately proposed to add an alphabetical and numbered list of all the countries and colonies represented, by means of which any particular set of stamps may be quickly located in the cases.

The total capacity of the 296 frames in the present cabinet is about 75,000 stamps. Approximately 20,000 had been mounted by the close

of the year, and labels had been prepared for about 30,000 more. As regards the material on hand the work had been somewhat more than half completed, and the alphabetical arrangement of the stamps by countries had progressed to the letter N. Spaces have been reserved for all of the primary varieties lacking, which it is expected to procure from time to time. The collection is, therefore, by no means a complete unit, but to be considered as the nucleus of a greater and more perfect representation of the stamps of the world to be gradually rounded out. As at present constituted it is most important on account of its size and wide representation, as well as for the period covered, commencing about the middle of the nineteenth century. It lacks especially the rare specimens of collectors and common varieties of certain periods, particularly of foreign issues. In general the mounting is of single stamps of each issue, but when necessary to serve a particular purpose they may be mounted in pairs, strips, blocks, or sheets. A selected series of the stamped envelopes of the United States follows the stamps of that country, but otherwise no provision has yet been made for the exhibition of postal cards and envelopes. In addition to the exhibition series which is expected to be the most complete, a reserve series will also be maintained for the use of special students of the subject.

The collection of United States stamps from the Post Office Department is an especially valuable one, all of the regular Government issues during the nineteenth century being represented as to types except the 1, 5, and 12-cent stamps of August, 1861, the other desiderata consisting in the lack of a number of scarce shades and special printings. The issues of the present century for the United States, the Philippine Islands, and the Canal Zone lack only a few shades which are not rare and can readily be secured. The representation of foreign stamps, however, is far less complete, and includes not a single one of the many great rarities of the nineteenth century. Though numerous gaps occur in the series of the twentieth century, they can mostly be filled without trouble and through the medium of exchange.

In the United States series, the installation of which has been completed, occur the following rare stamps, mainly unused copies and all in fine condition, namely, the 1-cent (type 1), 5-cent in dark brown and red brown and 24-cent of the issue of 1851; the 5-cent (type 1), in brick red and red brown, of the issue of 1857; the 3-cent rose, 3-cent carmine, 10 and 24-cent, and the 90-cent imperforate of the issue of August, 1861; the 3-cent scarlet, 5-cent buff, 5-cent olive buff, and 24-cent steel blue of the issue of 1862-1866; the 15 and 30-cent of the issue of 1869, with inverted medallions, the latter being one of the three great rarities in the issues of this Government; and a 12-cent, grizzled, of the issue of 1870. The set of reprints of vari-

ous issues made by the Government in 1875 for the Centennial Exhibition of 1876 is complete, with the exception of the 1, 3, 6, and 12-cent of 1871 and the 2 and 5-cent of 1875. The collection also contains the 2, 7, 12, and 24-cent stamps, special printing of 1880; the 2 and 4-cent, special printing of 1883; the complete issue of 1890, 1 to 90 cents, in imperforate blocks of four; a complete sheet of the 2-cent Columbian issue, 1893, imperforate, signed and attested by J. Macdonough, president of the American Bank Note Co., and A. D. Hazen, Third Assistant Postmaster General, as the first Columbian stamps printed; the 6 and 8-cent stamps of the issue of 1895 printed in error on revenue paper; the 1, 2, and 4-cent inverted medallions of the issue of 1901, the 2-cent being the greatest rarity in the United States series of this century; a complete set, 1 to 15 cents, of the issue of 1908 on bluish rag paper; a complete set of the postage due, special printing of 1880, except the 1-cent denomination; a complete set of the issue of 1893, special printing, imperforate blocks of four; a copy of the \$5 stamp of the State Department; a set of newspaper stamps, 2 to 96 cents, special printing of 1875; a complete set, 1 to 60 cents, in imperforate blocks of four, of the special printing of 1893; and a complete set of the issue of 1894, bureau printing of the American Bank Note design, 1 cent to \$6.

The Museum has been fortunate in securing for the classification and installation of its stamp collection the services of the experienced philatelist, Mr. Joseph D. Leavy, to whom credit is due for its present excellent condition.

MECHANICAL TECHNOLOGY.

In 1885 a section of steam transportation was established as a branch of the department of arts and industries. The title was soon changed to "transportation" and subsequently to "transportation and engineering," the aim of the section being, it was stated, to present an object lesson illustrating the history of devices to promote travel and commerce and to convey intelligence. As early as 1888, appliances, such as the stationary engine, etc., for generating power for manufacturing and for producing heat and light had also been included, and other subjects were soon added, comprising naval architecture, previously organized as a separate section, airships, bicycles, automobiles, electrical devices for all purposes, measuring devices, small firearms, and various other inventions.

In 1895 the title became "technological collections," and the curator was also placed in charge of the collections belonging to certain other sections which had recently become disorganized through the lack of space and of means for their maintenance. Among these were textiles, foods, and animal products, with which, for obvious

reasons, nothing could be done at that time, and it is only recently that these subjects have been revived in accordance with the original plan, as explained elsewhere on these pages. On the reorganization of the Museum classification in 1897 this branch was made a division entitled "technology (mechanical phases)," which was altered to "technology" in 1904 and to "mechanical technology" in 1912.

While the collections in this division had become extensive and diversified previous to 1900 and included most of the bulky objects now exhibited, their growth during the comparatively few years of this century has been unusually rapid, and the acquisitions comprise large series of exceptionally important objects. The restrictions as to space, however, prevent the seeking or acceptance of nearly as much additional material as is required to elucidate the several subjects here combined in a wholly satisfactory manner.

The primary purpose of the division is to illustrate the history of the beginnings and development of certain of the arts and industries, hereafter referred to, by the display of extensive series of original specimens and models. Each series, where the material is available, begins with the most primitive devices employed and ascends by successive steps to the most perfect modern appliances. As new advances are made and higher types of mechanism are devised and brought into use, additions accrue to the collections and take their places in the ever-expanding historical presentation. Aside from the extended exhibits illustrative of the several more important subjects, the collections contain numerous somewhat isolated examples of exceptional interest to the student of material progress. America may well be proud of the record here made of the achievements of her citizens. Within the period almost of a lifetime the industrial processes of the world have been revolutionized by the steam engine and the dynamo; the telegraph, telephone, and aeroplane; and the names associated with these epoch-making inventions are already, without the intervention of learned academies, inscribed with the immortals. At the present time the collections occupy four halls and portions of two others. They may be briefly described as follows:

The east hall is richest in these exhibits. Here are assembled large series of the original machines, instruments, devices, and apparatus, with models of others in great numbers, relating to the use of steam and electricity as motive powers and their application in the arts and industries, besides many other groups of objects of first importance in the various fields of technological activity. It is difficult to say which of these numerous series is of greatest interest, and the visitor turns from one to another fairly dazed by the diversity and intricacy of the mechanisms and by contemplation of the mysterious and powerful agencies invoked and controlled by their use.

Exhibits illustrating steam railway transportation and other uses of steam power occupy the northeast section of this hall. In prominent positions on the floor are two full-sized locomotives of the earliest types—the "John Bull," which is the oldest complete locomotive in America, built in England in 1831 and run on the Camden & Amboy Railroad from 1831 to 1868, and the "Stourbridge Lion," built in England in 1838. In the adjoining wall case are various railway appliances and a large number of models of engines and coaches, extending back to the first inception of the employment of steam as a motor power, many of the engines and coaches being of quaint design and the latter showing a gradual departure from the stage coach which had served as a pattern. Here also are displayed restorations of Hero's rotary steam engine of 150 B. C.; the Newton locomotive of 1680, which was propelled by a jet of steam projected backward against the air; Nordelle's engine of 1784, designed to test the action of high-pressure steam in propelling vehicles; Trevithick's locomotive of 1804; and many others connecting with the great traction engines of recent years. In the same section appear models of engines designed to utilize compressed air and gas, and others illustrating the carrying arts, showing man and beast as burden bearers, and the strange vehicles of all times and peoples.

Most noteworthy in the northern part of the hall is the large and unique exhibition of telephone devices, including both originals and models, the former in many instances contributed by the inventors, the latter to a great extent received from the United States Patent Office. Six upright cases contain an extensive collection of original apparatus illustrating the development of the speaking telephone invented by Dr. Alexander Graham Bell, and first put into operation in 1875, when its practicability was fully demonstrated. The earlier instruments were publicly shown at the Centennial Exhibition, in Philadelphia, on June 25, 1876, when they were tested by Lord Kelvin, Emperor Dom Pedro, of Brazil, and other distinguished persons. It was on that occasion that Lord Kelvin, after listening to the insignificant-looking toy, exclaimed, "My God! it does speak." Examples of the centennial telephones and several large series of later ones, including various types of magneto and battery telephones, with many pieces of apparatus used by Dr. Bell in his researches, are included in the installation, as are also a set of hand telephones, fitted with ivory cases, made in 1878 for exhibition to Queen Victoria, and the first desk telephone set, constructed in 1877, consisting of two wooden hand telephones attached to a wooden base, which is fitted with suitable connecting screws and flexible cords. Other apparatus devised by Dr. Bell for various purposes are placed next to the telephone exhibits. They

consist of his photophone, induction balance apparatus, multiple telegraph apparatus, etc.

Near by is the experimental telephone apparatus made and used by Mr. Emile Berliner, whose invention of the battery transmitter antedated that of Thomas A. Edison, and also various telephone devices demonstrating the work of Edison, Elisha Gray, and others. Of much historical interest is the make-and-break telephone, which transmitted sounds but not articulate speech, devised by Philip Reis, of Frankfort, Germany, in 1860.

At the western end of the hall are the exhibits illustrating the recording and reproducing of sound. The phonograph, devised by Leon Scott in 1857, occupies a special case at the entrance. It was made by Rudolph Koenig, of Paris, and obtained for the Smithsonian Institution by Prof. Joseph Henry in 1866. In this instrument the record of speech is traced on a carbon-coated cylinder by a light stylus attached to a thin membrane, which is set in vibration by the sound of the voice. The cylinder is rotated by hand. The record made by this process can not be reproduced, but was employed for studying sound waves. This machine is the first in which the vibrating diaphragm and recording stylus were used, and these devices form one of the principal features of the talking machines of later invention.

Following the phonograph is the Edison phonograph, the first talking machine operated. It was brought out in 1878, and in the same year was exhibited before President Hayes at the White House and before the National Academy of Sciences at the Smithsonian Institution. In this instrument the sound record is embossed on a sheet of tin foil, wrapped around a cylinder, by a metal stylus attached to a vibrating diaphragm. The spoken words are reproduced by revolving the cylinder while the stylus travels over the impressions, and this can be repeated many times. Closely associated are later developments of the phonograph, represented in a series of Edison instruments in which the records are made on wax cylinders by a steel stylus, and by inventions of Dr. Alexander Graham Bell and Mr. Sumner Tainter, by which the record on the wax cylinder is carved out by a stylus terminating in a cutting point.

Another group of important original apparatus illustrates the talking machine called the gramophone, devised by Mr. Emile Berliner, first introduced in 1887, and publicly demonstrated the following year before the Franklin Institute, in Philadelphia. In the gramophone the sound vibrations are recorded in a delicate film of wax or fatty substance spread on the surface of a flat zinc disk, and by means of chromic acid the lines traced by the stylus are etched in the zinc to an even depth. From this record is then made a reverse electrotype matrix which serves for the production of a large num-

ber of copies of the record in the form of India-rubber plates. The Franklin Institute machine, a collection of Mr. Berliner's early experimental apparatus, and specimens showing the various steps in the manufacture of the records form part of the exhibit. The gramophone was the forerunner of the Victor talking machines, good examples of which, as also many of the latest Edison machines, are likewise displayed.

The Moses G. Farmer series of electrical apparatus, consisting largely of models from the United States Patent Office, is of much interest to the student of this subject. The earliest specimen, 1850, is the model of an electrical plant with wind vanes designed to use wind power in charging electric batteries for the operation of incandescent electric lights. There are also scores of other devices devoted to various purposes, extending down to 1882. In another case in this section are several original telegraph machines, including a duplex telegraphic apparatus and an electromagnetic fire-alarm device of 1859.

In a wall case at the northwest corner of the hall is an exhibit of electrical lighting apparatus, representing many inventions and showing the wide interest taken in this branch. Among the names associated with the collection are Charles F. Brush; Hiram S. Maxim; Elihu Thomson; Matthias Day; William Wallace; Barton B. Ward; Henry Wilde; Nathaniel S. Keith; C. J. Van Depoele; Edward Weston; E. J. Houston; N. E. Reynier; Samuel Gardiner, jr.; Collier & Baker; A. P. Berlioz; Paul Jablochkoff; and L. R. Longworth. On the upper shelf of this case are numerous models of miscellaneous appliances, such as automatic grain weighers, steel-yard balances, dredging machines, steam governors, pumping engines, rotary machines, and automatic cut-off devices for steam engines.

Displayed in the southwest section are printing machines from the time of the Franklin press to the marvelous Hoe power press of to-day; typewriting machines, beginning with Thurber's very simple contrivance and extending over a period of 70 years to the present time; astronomical instruments, microscopes, surveying and engineering instruments and appliances, including theodolites, sextants, compasses, zenith sectors, quadrants and barometers, and very specially a case devoted to a remarkable series of Japanese surveying and measuring instruments; calculating machines of several types, the Whitney and other cotton gins, turning lathes and wood-pulp machines, besides electrical apparatus in overflow from other sections of the hall.

In the southeast section of the hall are installed the main part of the important exhibits relating to the electric telegraph, including the dynamos and other appliances. The electromagnetic telegraph system, invented and put in operation by S. F. B. Morse, provided

the first successful method of transmitting messages by electricity for commercial purposes, and it is still universally employed throughout the world. The beginning and development of the system is well represented by many pieces of original apparatus, from the crudest to the most perfect forms. Among these are the first recording machine, made by Mr. Morse with his own hands in 1837, and operated in the same year; and a facsimile of the recording apparatus used on the line built between Baltimore and Washington under the auspices of the United States Government, and opened for business on May 24, 1844. Arranged in historical order is a large series of telegraph transmitting keys, relays, sounders, recording instruments, specimens of line wire, insulators, batteries, and other material used in the construction and operation of telegraph lines. Especially noteworthy are a number of early pocket telegraph instruments for the use of operators in establishing temporary connection with lines in the Army and along public roads, and a small galvanometer made by Henley, in London, presented by Mr. Morse to Mr. Henry A. Reed, of Poughkeepsie, N. Y., and used by him for testing telegraph lines in 1855. There are also several original communications recorded by the Morse instruments, one at a private exhibition given in New York City in 1838, and another transmitted from Baltimore to Washington in 1844.

Among the models received from the Patent Office in 1908 are representations of the telegraph devices of Ezra Cornell, 1845; Tal. P. Shaffner, 1866; Royal E. House, 1852; D. E. Hughes, 1856; and Charles Wheatstone, 1874. A similar series illustrates the development of telegraph repeaters through the inventions of Charles S. Bulkley, 1850; J. E. Smith, and Farmer and Woodman, 1857; J. J. Clark, 1860; G. B. Hicks, 1862; W. H. Hamilton, 1865; J. H. Bunnell and W. G. Brownson, 1868; Elisha Gray, 1871; L. T. Lindsey, 1873; Charles E. Scribner, 1876; Rogers and Crane, 1880; and the Milliken automatic repeater extensively used on telegraph lines in the United States from 1862 to 1895. In the collection deposited by Dr. Alexander Graham Bell is an important group of apparatus devised by him in connection with his work on the telegraph which preceded his invention of the telephone. It embraces many devices which have been utilized in telegraphy. An interesting specimen, of which no duplicate is known to exist, is the Bain telegraph recorder employed on telegraph lines in New England from about 1850 to 1866, when it was superseded by the Morse system. By this machine the dots and dashes of the Bain alphabet were marked on a circular sheet of paper, moistened with a solution of potassium ferrocyanide, by the chemical action of the electric current.

The south east range, of which only a part is now available, contains a few examples relating to the history of the automobile as well

as a number of other objects. Here are shown the original Haynes gasoline automobile of 1893, a Haynes six-cylinder automobile engine of the present time, the Balzer gasoline automobile of 1894, the first steam-steering apparatus used on a vessel, 1858, invented by Frederick E. Sickles, and the Horton automatic basket-making machine, 1894.

The north east range is wholly occupied by a great collection of originals and models illustrative of water transportation and naval architecture. A large wall case along the west side of the range is filled with models exemplifying the development of the water craft of the United States from the simplest raft to the full-rigged ship, among which the fishing vessels of New England are especially prominent, while a smaller case on the east side contains a general presentation of the water craft of the world. Centrally placed is a special group of models representing the early American steamboats of Fulton, Fitch, and Rumsey, the steamship *Savannah*, and other equally interesting examples of steam-propelled boats or the essential portions of them. Also in floor cases are arranged 10 models of ships of the United States Navy, lent by the Navy Department, and elsewhere installed is a splendid model of the cruiser *Pittsburgh*. Likewise exhibited in this range is the original metal life-saving car invented by Joseph Francis in 1850. Among full-sized craft, suspended from the ceiling, are good examples of Alaskan skin boats—umiaks and kaiaks—birch-bark canoes, balsas, and dugouts from many parts of the world. Especially notable is an immense canoe of the Haida Indians of Queen Charlotte Island, the most imposing of the aboriginal American boats, which is carved from a single giant cedar trunk and embellished with symbolic designs in color. It was propelled by a crew of from 20 to 30 oarsmen.

The northeast court is devoted exclusively to the display of modern arms and armor, the exhibit of small arms being regarded as the most complete yet brought together in the United States. The collection of projectile weapons is introduced by a few examples of very primitive devices, the spear, the bow and arrow, the crossbow, and the blowgun. These are followed by the firearms, beginning with the earliest types—the matchlock, the flintlock, the percussion cap, and the various muzzle-loading forms, and continuing on through a wonderful series to the breech-loading, repeating, revolving mechanisms of to-day. The exhibition is greatly enriched by a magnificent collection of small arms, American and foreign, deposited by the United States Cartridge Co., which is very comprehensive and rich in rare pieces. The representation of our national arms is most complete, and we are able to trace their development from the colonial or pioneer period, with its so-called Indian guns, up through the Revolutionary period, the War of 1812, the Mexican

War, the Civil War, and the Spanish-American War, to the present time. In this series the pistols and revolvers are also included, and scarcely less interesting are the hunting, sporting, target, and telescope weapons shown in separate cases. Among the hand weapons displayed are the knife, dagger, saber, sword, battle-ax, foils, and shields. The Gatling gun with a few other examples of larger ordnance and illustrations of military equipment are likewise contained in the exhibition.

In the west hall will be found a few of the exhibits belonging to this division, namely, the time-keeping collection, which consists of hourglasses, sundials, time candles and lamps, a large series of watches and watch movements, and clocks, including a water clock; the Ramsden dividing machine and slides, 1775, for equally dividing the circular scales of astronomical and surveying instruments; one of the original Howe pin-making machines, in use from 1835 to 1875; many models of various agricultural implements, and other minor appliances.

The subject of flying machines, which holds to-day a transcendent place in public and scientific interest, is of particular moment to the Museum, in view of the extended and profound studies on aerodynamics by the late secretary of the Smithsonian Institution, Dr. S. P. Langley, and of the fact that he produced the first heavier-than-air machines, both in models and of full size, with which actual flights have been successfully made. The collection in this branch, though small, is so diversified in character and in the size of objects, that it has been necessary to find accommodations for it in several different places. A full-sized Wright biplane is suspended from the ceiling of the west hall; while in the east hall are installed the Stringfellow machine exhibited at the Crystal Palace Exposition, London, in 1868; the Hargrave compressed-air machine of 1891; the Lilienthal glider of 1894; the three Langley experimental machines, suspended in a row through the middle of the hall; the original engine of the full-sized Langley machine; three models of Chanute gliders of different types, 1896-1902, and the Zahm aerodynamic models.

What is certainly to be regarded as the most important of this series is the Langley experimental aeroplane of model size, which was flown on the Potomac River at Quantico, Va., on May 6, 1896, and made other flights on succeeding days. It was operated by a single-cylinder, one-horsepower steam engine, using gasoline fuel. Launched on the earlier occasion with a steam pressure of 150 pounds, it rose to between 70 and 100 feet and traveled more than half a mile at a speed of between 20 and 25 miles an hour, the propellers making 150 revolutions per minute. The total weight of the model is 30 pounds, and the sustaining wing surface 68 square feet.

This was the first time in the history of the world that a power-driven, heavier-than-air machine was made to fly through the air, and thereby was conclusively proven the correctness of Dr. Langley's theory, in the elaboration of which he spent many years. This remarkable demonstration was in fact one of the greatest, if not the greatest, epoch-making events of the last century, and is universally recognized as the foundation of the science and art of aerial navigation, already, in the short space of 18 years, brought to such wonderful perfection. The second of these machines, which made a flight on November 27, 1896, was built to the same scale as the first, but with some modifications, while the third is an exact reproduction, one-quarter size, of Langley's full-sized aeroplane, and was flown on August 8, 1903. Owing to a defect in the launching apparatus, the two attempts to fly the large machine during Dr. Langley's life proved futile, but in June last, without modification, successful flights were made at Hammondsport, N. Y. It is expected that this earliest man-carrying aeroplane will soon be installed in the Museum.

The Wright biplane has the unique distinction of being the first power-driven aeroplane purchased and put into practical operation by any government in the world. On July 30, 1909, during the experimental tests it made a flight across country from Fort Myer to Alexandria, Va., and return, carrying one passenger, at an average speed of over 42 miles an hour. It was kept in use by the Army service for about two years, and in 1911 was deposited in the Museum.

Four cases pertaining to this division are placed in the north hall among the historical exhibits. They contain memorials of as many individuals who gained renown in the field of scientific and industrial advancement, consisting of apparatus, illustrations of the results of their researches, honors conferred upon them, and other personal relics, including several portraits. Those represented are Joseph Henry, pioneer in the utilization of electricity; Samuel F. B. Morse, best known by his inventions of electromagnetic apparatus and for his successful efforts in the introduction of telegraphy; Cyrus W. Field, who planned and laid the first Atlantic telegraph cable, as well as later ones; and Samuel P. Langley, astrophysicist, inventor of the bolometer for measuring the heat rays of the sun—and the first to demonstrate the possibilities of aerial navigation with machines heavier than air.

TEXTILES AND ANIMAL AND VEGETABLE PRODUCTS.

In the classification of 1881 full provision was made for the subjects of textiles and of animal and vegetable products, including foodstuffs, and with little delay important materials for their illustration were assembled and arranged. These collections were, however, among the first to be retired and placed in storage with the

overcrowding of the building, and while such action was unavoidable, it produced an unfortunate gap in the Museum scheme, which every effort had been made to hold intact. Though constantly looked forward to, the opportunity to revive any of these branches did not occur until 1912, when the division of textiles was reestablished. For the purpose primarily of placing again on display such parts of the older collections of animal and vegetable products as were still in appropriate condition, these subjects were associated with the division of textiles, but with the means available it has been deemed wisest to concentrate most attention for the present on the textiles with which an exceptional amount of progress has been made.

The collections of textiles are designed, aside from the primary purpose of education, to serve as distinct aids to the several branches of this great industry in demonstrating its importance in the life of the people and in recording the economic changes taking place from time to time. There is both a reserve and an exhibition series, the former being exclusively technical, compactly arranged and so catalogued as to permit of ready reference. The exhibition series, selected, labeled, and arranged to furnish an impressive object lesson for the public, includes raw material, classified along industrial lines rather than biological; the technology of spinning and weaving, with specimens of the intermediate steps in the production of yarn and fabric; the ornamentation and utilization of woven structures; and an exposition of the history and development of the various technical operations as well as of the machines used. The exhibition space allotted to the division for all purposes comprises the south hall and southeast court with their galleries, the floor area of the east south range, and the gallery of the southwest court.

Textiles.—The south hall is devoted to an exposition of the origin, preparation, and utilization of the three principal fibers, namely, cotton, wool and silk. Starting with the cotton plant, sheep and silkworm, respectively, there are developed three parallel series of specimens, supplemented by photographs and models, illustrating the processes whereby these fibers are compounded into thread or yarn, and strands of this interwoven into fabrics of various kinds. Another series deals with the ornamentation of the woven fabric by means of dyeing, printing, and brocading.

The cotton exhibit, beginning with a plant bearing fully opened bolls of cotton ready for picking, contains specimens of the bolls and seeds of the most important species and cultivated varieties of the world, a large series of commercially graded raw cotton taken from the world's markets, and a set of the official United States standard cotton grades. In illustration of the processes involved in manufacture are represented the successive operations in making six-cord sewing thread, and the production of a standard cotton gingham,

every stage of which is shown from the opening of the bale to a finished garment. The accompanying large exhibition of plain, piece-dyed, yarn-dyed, and printed cotton fabrics includes not only standard goods like sheetings, drills, cambrics, percales, organdies, chambrays, ginghams, double-faced napped goods, cotton flannels, etc., but also dress goods novelties like crêpes and ratines.

The wool industry is inaugurated by a series of raw wools representing the best classes raised in this country, and for comparison a few selected fleeces from other parts of the world. Other specimens show the injurious effects of poor pasturage and disease upon the quality of the material and the trouble and expense caused the manufacturer by improper methods of marking sheep and sorting and baling wool. The very different processes employed in the manufacture of woolen and worsted goods are brought out in three large series of specimens, one showing the successive steps in the production of a woolen overcoat fabric, another of worsted yarn by the French system, and a third by the Bradford or English system. The general collection which follows comprises suitings, broad-cloth, cheviots, serges, diagonals, dress goods, crêpes, voiles, challies, cashmeres, Panama cloth, bunting, cloakings, etc., examples of 2 yards or more of each being draped in an effective manner to bring out the particular qualities of each fabric.

The silk section commences with a case devoted to the natural history of the cultivated mulberry silkworm, and includes besides eggs, worms, chrysalises, cocoons and moths, large models of a silkworm and of the male and female moths. A second case contains a series of commercial raw silks from the principal markets, together with specimens showing the methods of wrapping, marking, tying, and conditioning them. In still other cases are illustrated thrown silk and the processes used in preparing silk threads for weaving, sewing, and embroidering, as well as the utilization of silk waste from the steam filatures and of the cocoons from which moths have emerged. The exhibit of silk fabrics, which is extensive, is arranged according to the methods of dyeing and finishing rather than to use, and comprises piece-dyed, skein-dyed, printed, and brocaded goods, besides silk velvets and pluses. At the southern end of the hall is a fine display of color work on silk, which includes skein dyeing, illustrated by two rows of skeins of thrown silk in 150 shades, piece dyeing, and both warp and surface printing of silk goods by copper rollers. In other cases the subjects of textile printing and ornamentation of fabrics by figure weaving are also presented.

A large and deep wall case along the eastern side of the hall is devoted to the historical aspect of the industry, and contains several machines and models of machines which mark important epochs in

the development of manufacturing in this country. Among these are one of the three spinning frames built by Samuel Slater at Pawtucket, R. I., the oldest piece of cotton machinery in the United States; one of the first wool-carding machines constructed in this country; and the oldest example of the Grant silk reel, now in universal use for reeling raw silk. Also included in this display are a number of hand-power machines for spinning, winding and weaving, dating from the Colonial period, and machines for similar purposes used by people of other nationalities.

On the gallery of the south hall are exhibited the raw materials and manufactures of the less important vegetable fibers, and of hair, fur, and felt. The east side is assigned to flax, ramie, hemp, jute, and other exogenous or bast fibers, and the west side to the fibrous materials obtained from endogenous plants like the banana, century plant, pineapple, and cocoanut. Specimens deserving special notice are fine examples of bleached damask table linen, novelty yarns, a printed plush rug made from ramie fiber, wall hangings, figured upholstery fabrics of jute, and Maori robes of New Zealand flax. A series of cordage specimens made from flax, hemp, jute, abaca, sisal, pita, and coir show the importance of these fibers in the industrial world; and brushes and brooms made from palmetto, cocoanut, piassaba, yucca, agave, zacaton, broom corn, etc., are also displayed. The exhibits of hair and fur comprise examples of horse, cow, yak and human hair and of the products derived from them, and the skins of fur-bearing animals like the rabbit, hare, beaver, nutria and kangaroo which are valuable for their felting properties. The manufacture of felt for industrial purposes, piano parts, slippers, etc., and the successive stages in the making of fur-felt hats is extensively represented.

The collections in the east south range comprise, in addition to examples of the coarser weaving operations involved in basketry and the making of straw hats, exhibits of minor textile products, such as ribbons, ties, laces, veilings, braids and fringes; of fabrics of special construction, such as crêpes, Terry cloths, corduroys, imitations of seal, pony skin, and furs, and fabrics showing Persian lamb and similar curled effects; of knit fabrics, hosiery, and intermediate processes; and of small appliances used in the textile industry, such as shuttles, spindles, spools, bobbins, heddles, needles, etc., as well as an exposition of the modern methods of winding and delivering thread, yarn and cordage. The wall cases contain upholstery fabrics, curtains, and wall and floor coverings.

Animal products.—The collection of animal products, exclusive of wool and silk, is very incomplete and has scarcely been added to within the past 20 years. It is installed in the gallery of the southwest court, where the arrangement is planned to emphasize the in-

dustries using these materials rather than to call attention to particular groups of animals yielding important products. The adoption of this scheme has rendered advisable the installation in this connection of certain materials and specimens which are not of animal origin, when such are used in or produced by the same industries, as, for example, vegetable ivory, celluloid, and like nitrocellulose products, along with the manufactures of ivory, horn and pearl, and the introduction in a parallel series of vegetable gelatines and similar products obtained from animals.

Of materials for carving, turning or molding the most important displayed are ivory, bone, horn, tortoise shell, whalebone, vegetable ivory, mother-of-pearl, and various shells. The ivory collection includes teeth from the elephant, hippopotamus, walrus, cachet, narwhal, alligator and wild hog, and illustrates the manufacture from them of piano keys, brush backs, combs, billiard balls, jewelry, and handles for tools, knives and umbrellas, intermediate stages of work as well as the finished articles being shown. The utilization of the horns of the ox, stag, antelope, rhinoceros and sheep, and of the bones of many animals is treated in a similar manner. Among other industries represented in this series are the usages to which whalebone and tortoise shell are put, including such substitutes as featherbone, celluloid, and vulcanized rubber; the making of buttons from vegetable ivory, consisting of the seeds of several species of palms; the use of both salt and fresh water shells, furnishing mother-of-pearl, for buttons, jewelry and other ornaments, handles and carved novelties; the pearl fisheries of Ceylon, including models of boats and apparatus, shells, and a small lot of pearls of various kinds; the uses of precious coral, fish scales, and cameo shells. The various kinds of commercial sponges are also shown.

Still other exhibits are of feathers and featherwork, in which the ostrich plume is represented in every grade or form used; the leather industry, comprising the raw and tanned skins of many different animals, implements for dressing skins, and illustrations of the manner of making shoes, gloves, pocketbooks, hand bags, etc.; the use of bristles and hair in the manufacture of brushes; of animal membranes for sausage cases and for the heads and strings of musical instruments; of fishskins and sounds in the production of glue and isinglass; and of lac for sealing wax and shellac.

Vegetable products.—In this section of the division the collections are much less extensive than those of animal products, and there has been available for display scarcely more than was saved from the original exhibition, though recent accessions will furnish more material when there has been time to work them up. A tentative classification has been adopted, and means will soon be taken to systematically collect along the lines marked out. One of the most

important and urgent subjects is a full representation of the useful woods, finished to show their adaptability to different purposes. The manufacture of paper with the use of wood pulp is an industrial problem deserving detailed attention, and there are many others to be presented in the direction of the usages of wood in the arts and manufactures, and the extracts from wood which are of great variety and utility.

There is also the further subject of foodstuffs, of which the Museum once possessed a large collection, that has greatly deteriorated through long storage. It is, nevertheless, exceedingly rich in examples of the foods of the Indian peoples of this country and contains specimens which can not now be duplicated.

ART TEXTILES.

While textiles of high artistic craftsmanship have always had a place in the organization of the department of arts and industries, and an important loan collection of laces was formerly exhibited, circumstances prevented, for a number of years, the continuance of activities in this line. The subject, in fact, lay dormant until 1908 when unexpected assistance was tendered the Museum, and its acceptance has resulted in the building up of a collection remarkable for its comprehensiveness and for its worth. The proposition came from Mrs. James W. Pinchot, who has been supported and aided by many ladies of this city, a committee being formed and a few ardent devotees of the movement giving much of their time to the promotion of its interests. Mrs. Pinchot herself entered into the matter with deepest concern, obtaining desirable materials from every possible source, giving and lending on a greater scale than any other, and during long periods she engaged daily in the installation and labeling of the specimens.

The collection assembled through these means is composed primarily of laces which in number and variety are excelled in only two other museums in this country. Of other art fabrics, such as velvets, brocades, and embroideries, there is also an excellent presentation, and even very different though associated subjects of art, in the shape of fans, enamels, jewelry, etc., have been admitted. With this combination the collection is naturally very beautiful throughout, and in large part it is also markedly brilliant from the display of rich coloring and design. It likewise reaches back through a period of several centuries, bringing down to us the culture and refinement of the past, as recorded by skilled designers and craftsmen, in many rare and treasured heirlooms.

In reviving and fostering this museum branch, which offers so much of interest and pleasure to the casual visitor, the main idea has been, by affording acquaintance with the various kinds of art fabrics,

and especially the laces, using the best examples possible to obtain, to stimulate and assist the handicraft workers of to-day. The object sought is cultural advancement and not the satisfying of curiosity, though one would not minimize or hinder the enjoyable effects which the rich materials convey. Laces are among woman's chief contributions to art, as lacework is an expression of art feeling quite as much as a demonstration of skill in workmanship, and the striking pieces are not only registers of achievements but serve equally well as an inspirational influence in art education.

While containing many articles permanently acquired, the collection consists principally of loans, mainly received from ladies of Washington. That these deposits are steadily increasing, and the withdrawals are few in comparison, would indicate not only that the collection is constantly being strengthened but also that it may be regarded as a permanent feature, especially in view of its many earnest friends. Nevertheless, the conditions could be much improved by the acquisition in perpetuity of at least the materials necessary for a full systematic demonstration of the processes and history of the industries concerned. These alone could not, however, be expected to set forth the great range and wealth of accomplishment in these several lines, and the Museum would still remain dependent upon the same sources of supply which have produced the present splendid exhibition.

The collection of art textiles occupies the east north range, which is situated immediately to the left of the main entrance of the building. Having a floor area of about 4,400 square feet and a height of about 30 feet, the lighting is entirely from the north by means of 7 large windows. The furnishings comprise wall cases on two sides, a large screen at the inner end, and 42 floor cases. The last mentioned are of several patterns, including the flat top, the low double and single slope, and the high double slope, with 3 small Kensington cases and 1 special case. The general arrangement of the floor cases is in three rows lengthwise of the range, with a main passage starting at the entrance. In addition, there is a single row against the wall under the windows and another against the screen. The laces are installed in 26 cases in the central and northern part of the range, and may be briefly reviewed as follows:

The early and conservative period of lace has some excellent illustrations, among which may be mentioned a large piece of Italian drawn work altar cloth with masterly design, a rare sixteenth century Italian Gothic altar scarf, an old Spanish drawn work, an Italian seventeenth century drawn and cutwork piece, and other examples combining embroidery, reticella, and filet.

For the guidance of the student of the history of lace one case has been installed with an Italian reticella towel, eighteenth century;

drawn work; guipure; punto in aria; Gothic; Greek; reticella needle-point, seventeenth century; flat needle-point, Venetian; needle-point punto in aria; needle-point, transition from geometric to scroll; early bobbin, Italian; rare Schleswig needle-point; Venetian gros point; Venetian tape and needle-point, seventeenth century; point de France needlework; Flemish bobbin; needle-point with réseau or net; and other bobbin laces to the end of the series. In several cases in the middle of the range are represented the great periods and centers of the industry or of distribution from which familiar names have been derived. Here are Flemish and Italian bobbin laces of the seventeenth and eighteenth centuries, striking in their bold, simple, and forceful designs. Not less pleasing are the Venetian and Genoese point of the seventeenth and eighteenth centuries, which range from the extremely delicate patterns of the early types to the raised and rose gros point sculpturesque laces of a somewhat late period which Velasquez and Rembrandt loved to paint.

A number of notable specimens of Venetian lace may be seen in the cases containing personal collections. Brussels for a long period has enjoyed a reputation for producing fine lace. In that city many varieties were worked into one shawl, and there in the early eighteenth century lace was made and sold in England as point d'Angleterre, the name causing some confusion as to its origin. Of the latter are displayed an interesting collar and a large piece of church lace with figures. Valenciennes and Binche of great fineness and beauty were produced as early as the seventeenth century and this group is well illustrated by exquisite specimens. A piece of Binche worked to represent snow crystals and hence called point de Neige deserves special attention. Several excellent pieces of Mechlin are found in the collection, and among the rarer examples is an old Mechlin border with unusual ground. Of Alençon and guipure de Cluny, Burano, and Argentan there are many specimens. These laces show a greater floridness of design than the earlier types and are characterized by the raised surface of the pattern and outlining by stitching. One magnificent piece of old point d'Argentan, believed to be the finest extant and certainly worthy of the highest praise for its noble designing, is attractively displayed.

Bobbin lace required a "pillow" sometimes mounted on a stand. By means of a perforated paper or parchment pattern, and pins and bobbins to which the threads were attached, this lace was made. Two of the pillows about 100 years old and a copy of a painting by Terburg (1608-1681) showing a bobbin lacemaker at work are exhibited in a small case at the west end of the range.

The production of fine bobbin net with small thread furnished a most important stimulus to the making of lace. Often grounds of

plain net were purchased and a well-known variety of lace made by applying patterns to it. Appliqué lace is represented by a Belgian nineteenth century example of extremely fine fond or ground, and an appliqué net lace once the property of Queen Charlotte. Later laces, as Brussels, Chantilly, and Honiton, appear in profusion. Of these Honiton is characterized by simple designing, while Brussels and Chantilly run the gamut of florid patterns. Especially interesting is a Honiton collar with rose, shamrock, and thistle design affected by royalty. Of Spanish blonde, one of the few laces made with silk thread, there are charming examples.

Aside from the laces arranged to give an idea of the types and varieties of this beautiful handiwork are other individual collections placed together and containing rare and valuable specimens which delight the connoisseur. The collection as a whole relates principally to European work, but illustrations of Philippine embroidery and drawn work of excellent quality and of Paraguay Indian lace have been included. Among these are exquisitely fine piña handkerchiefs with worked scenes, and examples of Philippine needlecraft which will repay study.

A special exhibit of great interest consists of weavings, embroideries, samplers, tatting, knitting, and other handiwork of the American gentlewoman of the nineteenth century, together with appliances and accessories, forming a series that is noteworthy on account of its historical treatment of the pursuit of artistic expression during a former period. The fascinating subject of white embroidery has not as yet been given prominence, but a number of pleasing pieces of the work are displayed in the wall and other cases on the south side of the range.

The collection of art fabrics is one of peculiar attractiveness on account of the richness of its materials and colors, to which the spinner, dyer, weaver, and metal worker gave their best craftsmanship. Lace, more modest, employed only threads of white or rarely black to create its marvels, but lace was the final touch, the supreme finish to set off the rich colors of the costume. It is probable also that the edges of stuffs as they came from the loom required lace for their embellishment and in its origin lace appears to have been an out-growth of this need. It seems remarkable that these brocades, cloths of gold, velvets, satins, and embroideries should have survived the vicissitudes of several centuries and still remain strong and fresh. This is owing to the conscientious manner of their production, and these works will endure when the evanescent fabrics of the present period have crumbled to dust. Another reason for their preservation is that most of the fabrics in the exhibit are in the form of ecclesiastical vestments, which were systematically cared for in the church wardrobes. Among the materials are French, Italian, and

Spanish copes, chasubles, stoles of the fifteenth, sixteenth, and seventeenth centuries in gold and silver brocades and embroideries, and several of these are of the highest excellence. There are also christening robes, chalice covers, embroidered pictures, and other ecclesiastical objects in which textiles were employed. Art craftsmen of the sixteenth and seventeenth centuries displayed great skill in designing and weaving velvets intended for costumes as well as for hangings and upholstery. Velvets reached their acme in Genoa and good specimens are very rare. Some of these of Italian, French, and Spanish weaving are represented and may be compared with a case of excellent Chinese velvets of the eighteenth century.

Embroidery on woven fabric may have preceded decorative weaving. The interpretation of embroidery in weaving produces brocade in which the pattern, as in embroidery, is raised above the surface. Embroidery has persisted from ancient times, however, as a distinct class of work either as a decoration in combination with other methods or as an artistic production. It has given rise to a great number of stitches most of which are represented in the collection, and attention is called to several examples of laid stitch and cross stitch, and especially to a magnificent specimen of Italian embroidery installed on the screen. A number of very quaint and interesting pieces of English stump work of the period of Charles V are also shown. The setting of embroideries with precious and semi-precious stones is frequently observed in antique fabrics, the work often resembling the incrustations of the jeweler. A fine Spanish specimen of this kind is exhibited besides three other examples of embroidery squares and a long panel set with coral. The noble art of tapestry weaving is illustrated by two excellent Italian works, which, together with Persian, Chinese, and Turkish rugs, decorate the walls above the cases.

In connection with the art textiles have been included other classes of art objects such as fans, enamels, jewelry, and ivory carvings. Chief of these special exhibits is a collection of 32 European fans carefully selected by Mrs. Pinchot. They evidence not only the most perfect art and taste, but are also associated with sentiment and history. The enamels are from the famous Limoges artists; they are principally of ecclesiastical subjects and intended for shrines, etc. The colors are gris and polychrome, the former representing the older painting. These enamels may be compared with the ecclesiastical embroideries and embroidered pictures in other cases. A facsimile of the enamel cross of Queen Dagmar, who died in 1212, and a Danish cameo and enamel necklace, the cameos carved by the great sculptor Thorwaldsen, are especially noteworthy.

MINERAL TECHNOLOGY.

This division, the objects of which were partly incorporated in the classification of 1881, has been actively organized for scarcely more than a year, and owing to the complicated character of most of the proposed exhibits rapid progress in their preparation is not to be expected. For an explanation of these objects we can not do better than draw upon material contained in a recent report of its curator. Governmental organizations having already been established for investigating the latent mineral resources, increasing efficiency in their development, and the standardization of the products therefrom, the division should be excluded from activity in any of these directions. Again, in seeking new products or added refinements wherewith to cater to the ever-widening demands of society, manufacturing interests in the field of mineral technology have become awakened to the value of scientific research, no longer merely relying on the casual findings of disinterested investigators. Every important type of operation based on mineral research affords from one laboratory to many devoted to researches problems involved in widening the range of products, giving additional refinements to those already in use, and studying their behavior under specific conditions. As a result, new mineral derivatives, new uses of those already established, and newly determined facts concerning their adaptability are constantly accruing. For the dissemination of this mass of most important information the public is almost wholly dependent upon the industrial advertising manager, and however accurate may be the contributions from such sources, they are bound to fail in their broader educational value through the fact that the information does not emanate from a disinterested source. In its most purely technical aspect, therefore, the real opportunity of the division to be of service lies, not in the direction of abstract research, but in the exactly opposite one of rendering assistance toward keeping the public in touch with important current developments in mineral technology.

The foregoing presents some of the purely utilitarian aspects in the range of opportunity open to the division. An equally important and more fundamental opportunity is offered along the more conventional lines of cultural information. By far the greater proportion of the economic minerals, in one form or another, have grown to be of importance in daily household life; but extension of information concerning them has not kept pace with extension in their use. Everyone is interested in knowing of the source and preparation of the materials in daily use, and by placing such information within the range of popular comprehension the Museum would be rendering a valuable service.

The plans for the development of the division aim, therefore, toward an embodiment devoted to the interests of the public at large as opposed to the abstractly scientific or highly technical, and with its energies directed to the extension of cultural learning together with information concerning significant current utilitarian facts. In the attainment of these results it is proposed, to the extent that space is available, to prepare a model reproduction of each important type of mineral industry operating in the field, tracing conditions and processes from natural occurrence to finished products; around that model reproduction as a central theme to assemble in each instance such a systematic exhibit as will best serve to emphasize important features in both manufacturing processes and industrial capabilities; and finally, as each respective series is completed, to make it the basis of an educational bulletin for popular distribution. Development along such lines will attract the interest and attention essential to the success of the educational effort; will appeal in affording a direct, comprehensive summary of interesting and significant facts in logical sequence; and its possibilities will be country wide instead of limited to Museum visitors.

For the reasons set forth, the research phase of activity has been entirely subordinated to the interests of popular education, and, accordingly, no effort has so far been made to develop a distinct study series. It should be recalled, however, that a very large and exceptionally fine collection of the minerals and ores of the country, divided into exhibition and study series, is in the possession of the department of geology, in the new building. For the division of mineral technology nothing is being accepted at present unless eligible for incorporation in an industrial exhibition representative of conditions and operations in one or another field of mineral resources, the general character of which at least has previously been determined for each subject.

As a preliminary to the development of the division it was necessary to determine upon a suitable apportionment of the available space among the mineral products to be represented, and this again required the planning in at least a tentative way of the size and character of the exhibits relating to each subject. With this broad outline established, it was possible to take up the details and to enter into consideration with the producers and manufacturers as to the means for securing such models and other materials as were needed. All of this work has been entered into most heartily, but it is of such a painstaking character that, except for the few models obtained at the St. Louis Exposition, there would have been scarcely anything for public display by the close of the year. Through the cordial cooperation given the Museum, however, many exhibits were placed in course of preparation, and though some of these will require a considerable

time to complete, accessions of importance may soon be expected to reach the Museum with some regularity.

It is gratifying to note that the public-spiritedness of mining and metallurgical interests has relieved the Museum largely of the first cost of the exhibits under way. This is especially significant since a reasonably complete representation of all the industries in mind will involve a very large expenditure, and outside contributions are essential to its fulfillment. Starting with the mineral resources economically most important, such as iron, clay, gold, silver, copper, etc., and ranging thence downward through the minor ones of bismuth, cadmium, lithium, etc., at the other extreme, there are upward of 50 bases for operations in mineral technology. The minor ones may be provided for readily, but the important ones, as for example, iron, in all their complexity of phase, offer innumerable problems for solution; and with the resources at hand patience must be shown in contemplating the building up of what will ultimately be one of the most important and unique museum demonstrations in the world.

The exhibition space assigned to the division comprises the west hall, the south west and west south ranges, and the southwest court, all of which are adjoining and intercommunicating. One only of these halls had been opened to the public by the close of the year. This was the southwest court which presents a résumé of the occurrence and mining of coal, reasonably complete except as to detail. The chief units in the coal series have been briefly described in the body of this report, and include models of the Consolidation Coal Co.'s colliery at Fairmont, W. Va.; the Pittsburgh Coal Co.'s colliery at Willock, Pa.; the Western Coal & Mining Co.'s colliery at Jenny Lind, Ark.; the Takashima coal field in Japan; a by-product coke plant according to the Koppers system; non-by-product ovens of beehive and rectangular types; and a bench of gas retorts. Isolated individual models in other halls, belonging to other series being assembled, are of the Fayal iron mine at Eveleth, Minn.; an old-style blast furnace; a pot glass furnace, and a tank glass furnace.

Exhibits in an advanced state of construction comprise sundry detail models for addition to the coal series; detail modeling for the series illustrating glass manufacture; complete demonstrations of the natural graphite industry, the artificial graphite industry, and the abrasives industries, natural and artificial; the occurrence, mining, metallurgy, and industrial adaptability of zinc; the manufacture of lead pigments and alloys; the mining, technology, and uses of asphalt; the occurrence, mining, and technology of gypsum; the mica industry, and the asbestos industry. Less advanced, but nevertheless definitely under consideration, were complete series representing the technology of lime, refractories, alkalies, and ornamental tile.

MEDICINE.

The division of medicine is one of the branches of the department of arts and industries which has been continuously maintained since its establishment in 1881, when it was designated "section of *materia medica*." Its foundation was based upon the large donations of drugs and drug materials received by the Government from exhibitors at the Centennial Exhibition of 1876, which soon were supplemented by important contributions from many other sources. Through this means and by the additions of subsequent years the collection has grown to a considerable size and to a certain degree of completeness, but there is still much to do in the way of perfecting it, and the active support of the division is urgently called for, in view of its direct relations with the medical work of the Government and of its influence on the practice of medicine generally. With its development there has been a broadening of its scope and the assumption of additional features, which add greatly to its cultural value and makes the collection, as exemplified in its exhibition series, entirely unique for this country.

The curatorship of the division until recently has been held by medical officers of the United States Navy, of whom seven have from time to time been detailed to this duty. The first was Surg., later Medical Director, James M. Flint, who not only had the responsibility of organizing and planning the work of the division, but served 25 out of the 33 years since 1881 as its honorary curator, continuing in this office even after his retirement from active service in the Navy.

The search for desirable material was naturally most active during the earlier years, when the field was practically open, and was richly rewarded by numerous and some very extensive gifts from the leading drug houses of this country, representing quite completely the drug commerce of the United States at that time, and also to some extent by donations from abroad. Through the medium of exchange, chiefly with foreign museums, valuable specimens were likewise obtained; the accessions in recent years have been numerous and varied, and in the preparation of exhibits for international expositions means have sometimes been available for securing special features. The collection now aggregates over 6,000 actual specimens, besides numerous pictures or illustrations. There is the customary division into exhibition and reserve series, and notwithstanding the nature of most of the material the former has been made attractive and comprehensible to the general visitor.

Under the original classification, that of 1881, two primary divisions were recognized, namely, inorganic *materia medica* and organic *materia medica*, the latter being subdivided into vegetable products, products of fermentation and distillation, and animal

products. In 1888, in view of the growth of the collection, the variety in points of interest and importance of the individual specimens, and the small amount of space available for exhibition, a modification of this classification was introduced. Retaining its general features, there was a subdivision into several series. The first comprised the more important drugs in general use among civilized people, known as "official" or "pharmacopeal" drugs, illustrated by colored plates, photographs, drawings, etc. The next contained the indigenous drugs of the United States, not official, and the third drugs from Mexico, Chile, India, Japan, Korea, China, and other countries, arranged in separate geographical groups.

The present classification was adopted in 1898, and resulted from the closer association of the division with the ideas embodied in the department of anthropology, in which the subject of medicine had been incorporated under the reorganization then made. The scope of the collection was greatly extended, so as to present as far as possible by object lessons the history and progress of medicine from the earliest times and among the various peoples of the world, which meant the introduction of objects and of illustrations of practices quite at variance with the views of modern civilization. The classification is as follows:

1. Magic medicine, including exorcism, invocations, incantations, amulets, talismans, fetishes, charms, signatures, etc.

2. Psychic medicine, including laying on of hands, royal touch, music, metallotherapy, suggestion, hypnotism, Christian science, faith cure, etc.

3. Surgical medicine, including baths, massage, electricity, acupuncture, cautery, blood-letting, surgical operations and appliances.

4. Pharmacological medicine, including American Indian medicines, Egyptian medicines, Greek and Roman medicines, Chinese medicines, Hindu medicines, medicinal medicines, and modern medicines.

The exhibition series of medicine occupies the north gallery of the east wing, the area of which is, however, much too small even for the amount of material now displayed, and there is a considerable number of specimens and illustrations on hand which it is important should be added. The cases are rather closely arranged in alcove fashion, but notwithstanding their crowding the collection is well installed, and every object is accompanied by a fully descriptive label, besides which there are larger general labels for the cases and sections. Most of the specimens are in sealed glass jars as a necessary protection against deterioration, but some do not require this expedient, and what might otherwise be regarded as a monotonous exhibit is enlivened by special features and by illustrations which are mostly colored. Pictures are, in fact, freely distributed through

the cases, and in many instances they furnish the only means of representing a subject.

The section dealing with the history of medicine has 8 exhibits, beginning with magic medicine, which is followed by psychic or mental remedies, and the medicines of the American Indians, the Egyptians, the Hebrews, the Greeks and Romans, and the other more eastern nations. Of modern medicines there is 1 case of animal products, 10 cases of vegetable products, and 1 case of organic chemical products. Among the special features are 2 screens of portraits of eminent American physicians, 2 pillar screens with pictures of medicinal plants, and exhibits illustrating the composition of food, including milk and bread, the utilization of food, with an example of a day's ration, and the composition of the human body. The instruments used in connection with the practice of medicine are also represented.

The exhibition as at present constituted is of great cultural value, but its importance in this respect could be much enhanced by certain additions, including more botanical illustrations, both as colored pictures and as mountings of actual plants. This it is hoped can soon be done and the collection given more room. The reserve series, however, is the one which appeals most to the profession. It is supposed to contain a fairly complete representation of drug materials, all of which, together with the specimens on exhibition, have been carefully identified and catalogued, but the division has never been supplied with an adequate laboratory through which these materials could be rendered as fully serviceable as is implied in the scheme of the division. The collection should also be kept up to date, all newly discovered substances pertaining to the subject being promptly added, and, furthermore, all specimens in at least the reserve series should be in a condition retaining their full natural properties. On such a basis the division would become in the truest sense, as was intended, a place of reference, where makers and testers of drugs could always find accurately determined samples of all the natural products of which medicines are made. Its importance has always been recognized by the Government, but, through the inadequate support given the honorary curator, it has not been possible to fully or properly carry out the objects to which his time was so long and earnestly devoted. It is the purpose to place this division on a better working basis at the earliest opportunity.

PHOTOGRAPHY.

During a long period there has been gradually assembled a large amount of material designed to illustrate the history and development of photography. This work of collecting was begun by Mr. T. W. Smillie, chief photographer of the Institution and

Museum, and has ever since remained strictly in his charge as custodian of the section pertaining to this subject. So unostentatiously have his labors in seeking original pieces of apparatus from the earliest dates and examples of the results of the various processes been carried on, that only recently has the Museum itself come to fully realize the importance of his efforts. The collection brought together is without a parallel and so well is nearly every step shown that it furnishes an excellent basis for an historical account of this interesting art, on which the world now chiefly depends for illustrative purposes. To the public at large, and even the casual visitor, it has likewise a great attraction at this period when the camera is so universally in vogue. The installation, begun about a year before, was sufficiently advanced to be opened to the public late in June, 1913, but additions have since been made, and others are soon to be expected.

The exhibition of photography occupies the gallery of the northwest court, which has a total length on its four sides combined of 209 feet 10 inches, and a width of 10 feet 3 inches. The north, west, and south sides are provided with a continuous deep wall case, but on the east side, where the large arched openings between the piers, overlooking the north hall, have not been closed, the cases are of several floor patterns, the American, the half-unit slope top, and the flat top. Elsewhere a number of floor cases of different kinds have been placed alongside the outer railing. The light, which comes from a skylight and clerestory windows, is entirely suitable. The labels, though prepared, had not been printed at the close of the year. They comprise individual labels for the objects, general labels for the sections, and very full descriptive labels for the cases.

The gallery is entered from the rotunda at the southeast corner where the earliest objects are first encountered on the right. Thence the order of arrangement is along the east, north, west, and south sides to the point of starting. The collection begins with the camera obscura, and in the several separate cases on the east side is extended through quite a number of the early stages of photography. The camera obscura, known to Euclid in a primitive form 300 years B. C., was first used in photography by Thomas Wedgwood in 1802, though experiments made in the eighteenth century tended in this direction. Wedgwood produced silhouettes in white on a black ground by the use of paper sensitized with a solution of silver nitrate, and also obtained photographs of leaves, wings of insects, and other objects on paper and leather sensitized in the same manner, but, as no solvent had been discovered for the silver salts which remain unaltered by light, these photographs all faded. The exhibit comprises a photograph of an engraving of the camera obscura as used in the sixteenth century, a model of a camera obscura as improved in 1875, and examples of the work of Wedgwood.

The first permanent heliographs by the so-called asphalt process, which seemed to present exceptional opportunities for illustrative purposes, are depicted by a single print made by Joseph Nicéphore Niépce in 1824. The subject of the daguerreotype is well and fully represented by various pieces of apparatus, including a camera used by S. F. B. Morse in 1839, and a large series of pictures. This process, invented by L. J. M. Daguerre and published in 1839, consists briefly in fuming with iodine one surface of a copper plate which has been silvered and highly polished, then exposing it in the camera, developing with vapor of mercury, and fixing in a solution of hypo-sulphite of soda. The exposure at first required about 15 minutes, but experiments made by others soon afterward reduced the time to less than a minute, and made the pictures more permanent and much more beautiful. The calotype or talbotype, the invention of William Henry Fox Talbot, of England, published in 1840, marked one of the most important advances in photography, as it provided for a negative made of paper from which any number of prints could be taken. The Museum is fortunate in having examples of the apparatus, negatives, and prints, the latter made by Mr. Talbot himself, and including views of his home, Lacock Abbey. The stereoscope with stereoscopic views follows next, as its invention in 1838 was contemporaneous with that of photography, though originally designed for viewing drawings. In the last case of this series are examples of albumen positives on glass and prints from albumen negatives, invented by Niépce de Saint Victor in 1848; of ambrotypes, introduced by Cutting and Rehn in 1850; and of vitrified enamel photographs, invented by Lafon de Camarsac in 1854; besides a series of tintypes by Peter Neff, the discoverer of that process.

At this point is reached the beginning of the wall case, in which and in the few additional floor cases, the collection is continued in about the following order: In the first section is a series of plain silver prints, some of which were made at an early date from collodion glass negatives and called crystallotypes. They were used to illustrate the Photographic and Fine Art Journal in 1857 and other publications of that time. Some later prints have also been introduced. The next three sections are devoted to the wet-collodion negative and albumen silver print, representing processes that were employed for many years. The use of collodion as a vehicle to hold the silver haloids on plates originated with Frederick Scott Archer in 1850, while the silver printing process was introduced about 1852. In this connection is likewise displayed a series of composite photographs.

Carbon printing is illustrated in the adjoining section by prints of the various processes. This form of printing is the result of

experiments by many persons, dating back to the fourth decade of the last century, but its discovery can not be ascribed to any one of them. The process used to-day was invented and patented by J. W. Swan in 1866. A view at Essex, Mass., furnishes an example of the making of enlargements through the medium of whey from milk, first published in 1870. The methods of printing in platinum, including the bromogelatin emulsion negative, follow. Platinum printing was invented by William Willis in 1874, the picture produced being composed of platina black, which is almost indestructible, sepia or brown tones being obtained by adding salts of mercury, uranium, or other substances. The process has also been used in decorating linen and wood. In the next section is a series of pictures showing the uses of the various printing-out papers introduced about 1891. Producing results similar in character to the albumen silver print and being ready sensitized for use, they have to a considerable extent superseded the former.

An assemblage of apparatus dating from the introduction of Frederick Scott Archer's collodion wet-plate process, 1852, and including many of the most important modifications and improvements up to the present time, occupies two of the sections, in which the pieces are arranged approximately in the order of their invention. Two other sections display the earliest forms of the hand camera, together with the latest improvements, accompanying which are a number of enlargements mostly made from kodak negatives. A large series of kodak cameras and another of mechanical lens shutters, dating from 1879, are installed in separate cases.

Important results in photography, mainly recent, are represented in several sections, as follows: Portraiture and interior views by means of the flash light; the work of some of the leading portrait photographers in the United States, showing wonderful advancement; a series of photographs by H. P. Robinson and others, collected in 1890, and valued for their pictorial merits without regard to process; a series of photographs selected by Mr. Alfred Stieglitz, of New York, the work of a number of men and women most eminent in the pictorial line of photography during the period from 1841 to 1913; and a large carbon print from a direct flash-light negative by Mr. W. S. Lively, president of the Southern School of Photography. Under printing by development are displayed prints on bromide paper, first produced about 1881 and almost exclusively used for making enlargements by projection, and on chloride developing paper or gaslight paper, invented about 1898.

The development of the motion picture is partly illustrated, the exhibit including the zoötrope, first used for showing drawings representing motion and afterwards with photographs; a model of the

Muybridge arrangement for photographing men and animals in motion, with several prints; and a complete series of the motion-picture cameras and projectors invented by Mr. C. Francis Jenkins, of Washington.

The use of photography in connection with scientific observation is represented by the following series of prints, those from institutions having been received as gifts: The apparatus and photographic work of the Harvard College Observatory, in which the views of the stellar spectra and also the very early results are especially notable; a large photograph of the moon and one of the solar spectrum by Rutherford in 1865, a part of the 36-foot solar spectrum by Rowland in 1888, and a series of recent views of the moon by Ritchey; a fine series of illustrations of work done by the Mount Wilson (Cal.) Solar Observatory of the Carnegie Institution of Washington between 1907 and 1911, including a direct photograph of the sun, a calcium spectroheliogram, two hydrogen spectroheliograms, pictures of various nebulae, prominences on the sun, star clusters, Halley's comet, Saturn, and Mars, and views of the buildings and of the various telescopes and other instruments of the observatory; some very remarkable photomicrographs of disease germs, of laboratory experiments in the growth of animal tissues after the death of the animal, of the transplanting of arteries, etc., from the Rockefeller Institute for Medical Research; and a series of X-ray photographs, mostly of surgical cases, photomicrographs of disease germs causing malaria, cholera, tetanus, hay fever, etc., and of other parasites.

Under color prints are displayed a few of the various processes resorted to in artificially producing colors, as well as the genuine color photographs, but the representation is very incomplete, and important additions are soon expected. Some of the noteworthy contents of the case are a photographic reproduction in color by Mr. Miley of an old family portrait; several prints by the MacDonough-Joly ruled screen process, 1894; one of the earliest three-color colotypes; several of R. W. Wood's diffraction grating color photographs, 1899; one of Prof. Gabriel Lippman's direct color photographs by the interference method, 1891; and a number of autochromes, 1907. A stereomotorgraph, with a series of direct color slides, is about to be installed.

CERAMICS, METAL AND GLASS WARE, ETC.

The gallery of the northeast court has for a long period been dedicated to the subject of pottery, and for 25 years it contained the remarkable Chinese collection of Mr. Alfred E. Hippisley, recently reclaimed by the owner. In the lack of space for the proper display of certain other classes of art this gallery has also been used for

the exhibition of bronzes, of lacquered and glass ware, of ivory carvings, etc., not belonging to the division of history.

Three sides of the gallery are furnished with a single continuous wall case, the framework of which, as of all the other cases, is ebonized. The wall case is divided into sections, each painted a distinctive color to suit its contents, but done so harmoniously as to add to the general effectiveness of the installation, which is one of the most agreeable in either building. The other cases, all of which are placed near together, are mainly square-top floor cases mounted on legs, with a few of the slope-top pattern. A row of these extends along the west side of the gallery, overlooking the north hall, the remainder occupying the inner edge of the gallery against the railing. The arrangement in the wall case is geographical, and in the floor cases it is mainly the same.

The wall case series begins at the right of the entrance to the gallery with excellent types of ancient aboriginal pottery from Central and South America, followed by rare specimens of ancient and modern Pueblo Indian and ancient Mexican ware. A section is given to the ceramics of Spanish and Portuguese America and contains good examples of the terra cotta and glazes of the folk pottery characteristic of those countries. Most interesting products of the old potteries of Pennsylvania and West Virginia are shown in another section, together with modern wares to be noticed later. Especially attractive is a rare series of lead glazes from the old pottery at Morgantown, W. Va., and a small collection of the curious pottery of the Pennsylvania Dutch of the last century. Adjoining are American and European tablewares, noticeable among which are two Bennington, Vt., pitchers with blue background from Miss Katherine Noyes, a set of English luster from Mrs. A. S. Gillett, a set of rare Nymphenburg from Miss Olive Risley Seward, majolica druggists' pots, and copies of apostle pitchers.

The European series commences with English ceramics—Minton & Co., H. Doulton & Co., T. C. Brown, Westhead, Moore & Co., Maw & Co., and other makes chiefly of the period of 1876. Next follows a fine and representative collection of Sevres, presented to the United States by the French Government and intended to illustrate this particular industry in its entirety, from the clays to the finished productions. Three pieces in the same section were donated by the Sultan of Turkey, and a splendid blue vase was the gift of Messrs. L. Straus & Sons. In adjoining sections are French and Dutch ceramics, the latter consisting of blue and polychrome plaques of great variety lent by Mrs. Julian James. They are succeeded by rare Hispano-Moresque copper-luster ware, also lent by Mrs. James, and by Moorish pottery collected in north Africa by Mr. Taleott Williams, showing admirably the great fertility in design of the

potters of that region. A few pieces of the great finds of Cesnola in the island of Cyprus are exhibited in the next section, along with modern Turkish ware.

The farther Asiatic collection starts with specimens of excellent Siamese metal work and inlaying with shell, presented by the King of Siam in 1876. Mortuary pottery from ancient Korean tombs occupies the adjoining section, and following is an exhibition of early Korean protoporcelains, porcelains, stoneware, etc., which are of absorbing interest to students of the beginning of the porcelain industry in China and Japan. These materials were procured by the late Commander J. B. Bernadou, United States Navy, Dr. H. N. Allen, and Mr. Gustavus Goward. Specimens of Japanese bronzes, many of them from the Gen. Horace Capron collection, are installed in the two succeeding sections, and next them is the Capron collection of Japanese lacquer. The remaining sections of the wall case contain modern Japanese lacquer of exquisite taste and workmanship, belonging to the Harold I. Sewall collection; Chinese and Japanese porcelain collected by Miss Eliza Ruhamah Scidmore; Satsuma and other ware of that class, mainly from the Capron collection, together with many specimens presented by the Japanese Government; a small series of Japanese enamels and vases; and Japanese and Chinese art ceramics. Notable in the last section is a large Japanese plaque decorated with doves in flight, and the large blue and white vases of the Capron collection.

The floor cases on the west side of the gallery, with a few exceptions, are used for Chinese pottery and Japanese art metal work belonging to the Sewall and Scidmore collections. Those on the north side contain a wonderful Japanese wistaria vase of Sumida ware presented by Julius Stahel, the remainder of the Scidmore collection of Japanese and Chinese pottery, Japanese small carvings in ivory and wood, illustrations of the Chinese enamel industry from Mr. C. G. Calkins, and small bottles of stone and porcelain. On the east side are two cases of select Japanese pottery lent by Hieromichi Shugio, pottery from Russian Poland, a case of Bohemian and modern iridescent glass after ancient shapes, and two cases devoted to a collection of ancient Cyprian, Phoenician, Greek, Egyptian and Roman pottery, glass and metal work collected by William H. Seward on his journey around the world and presented by his daughter, Olive Risley Seward. Two vases of Savona faïence, lent by the late Mrs. A. H. Magruder, occupy one of the small cases in this series.

On the south side of the gallery American art pottery is placed in juxtaposition with similar material in the wall case. This consists of examples of the work of the designer-artist Edward Lycett; of the Grand Feu Art Pottery, of Los Angeles, Cal.; the S. A. Weller

Pottery Co., whose artist, Jacques Sicard, contributes a splendid luster tablet; the Pope-Gosser China Co.; the Roseville Pottery Co.; D. F. Haynes & Co.; the Warwick China Co.; the Goodwin Pottery Co.; the International China Co.; the Colonial Co.; the Willets Manufacturing Co.; the A. W. Roblin Co.; the Sevres China Co.; the Homer Laughlin China Co.; Sophie Newcomb College; the C. S. Thompson Pottery Co.; the Edwin Bennett Pottery Co.; the Norse Pottery Co.; the Van Briggle Pottery Co.; the Gates Pottery Co.; J. S. Taft & Co.; and the Wheatley Pottery Co. A section of the southeast wall case contains specimens of the earlier Rookwood pottery, the Clifton art pottery, the Grueby Faïence Co., the Brower Pottery, and Mayer Bros. The collection of contemporaneous American pottery is interesting but scarcely representative. It shows, however, that American potters are producing specimens of great dignity and worth, which will increase in value and historical importance as records of art.

The south side of the gallery also holds a small exhibit of American glass, notably a complete exposition of the manufacture of cut glass from the Libbey Glass Co.; a quantity of cut, engraved, and otherwise decorated glass from the Dithridge Flint Glass Co.; fine art pieces from the Union Glass Co.; Pomona glass from the New England Glass Works; specimens from the Fostoria Glass Co.; and wonderful examples of Tiffany favrile glass. Two candle shades of English glass about one century old, the gift of Mrs. E. L. McAdory, are shown in a case on the west side of the gallery. Above the wall case are displayed a glazed terra-cotta plaque attributed to Luca della Robbia, lanterns and vases of Japanese work, Cyprian vases, etc., and at the entrance to the gallery are a large Doulton vase and an Italian terra-cotta fountain.

Exhibited elsewhere than in the gallery, but belonging to the division of ceramics, are a number of pieces mostly of large size and some of considerable value. Among them are the following: A pair of centennial memorial vases, presented by the Messrs. Haviland, of Limoges, France, in 1876; an allegorical mosaic, composed of 900 tiles of Limoges faïence, representing the genius of man dominating and utilizing fire and water, designed by Bracquemond and made by the Messrs. Haviland; a pulpit and font, and a pair of sculptured tablets, in relief, representing Christ in Gethsemane and the crucifixion, all in terra cotta, made by H. Doulton & Co., of Lambeth, England; a mosaic reredos by Minton, Hollins & Co., of Stoke-upon-Trent, England; and one of the famous peachblow vases and a celadon porcelain vase of the Yung Chêng period (1723-1735), gifts of the Chinese Government.

RELIGIOUS CEREMONIAL OBJECTS.

Religious sentiment expresses itself in creed and cult, and it is the latter which most readily lends itself to museum exhibition. The collection in the National Museum attempts to illustrate and explain by means of objects the rites and practices of seven of the historic religions. It is mainly installed in the south gallery of the west hall, which is entirely occupied, though some of the most striking features, and especially the Buddhist collection of Mr. S. S. Howland, are displayed in the adjoining rotunda of the building. The furnishing of the gallery consists of a practically continuous wall case, 8 feet 2 inches high, with projecting or wing cases, 7 feet high, at intervals corresponding with the wall piers, thus producing a bay or alcove arrangement, and as the wing cases, with one exception, are diaphragmed each of the bays has three distinctive fronts. The amount of space thus supplied is, unfortunately, altogether inadequate for the collection, resulting in an overrowded arrangement, and preventing the installation of much important material which remains in storage.

The first two alcoves or compartments are occupied by the collection of modern Jewish ceremonial objects which, consisting to a great extent of a loan from Hadji Ephraim Benguiat and his son Mordecai, is unrivaled in completeness and in artistic and historical value. It comprises furnishings and appointments of the synagogue and objects used in public worships, such as curtains of the Holy Ark, Torah scrolls in richly embroidered mantles with silver bells, breast-plates, and pointers, Megilloth in revolving cases of wood and silver of rare workmanship, manuscripts of prayer books, lamps and candlesticks of brass and silver, lavers and alms boxes, phylacteries and prayer shawls, etc. Of the numerous appurtenances to the Holy Ark, which constitutes the architectural as well as the ideal center of the synagogue, may be singled out a curtain of red velvet with a border of green velvet, measuring 9 feet 5 inches by 6 feet 3 inches, embroidered in silver and gold with a large burning lamp (symbolizing the light that emanates from the Torah, or the Law of God, which is kept in the Holy Ark), surrounded by flowers and passages from the Scriptures; and another curtain of yellow silk, made in Italy in 1736 and measuring 6 feet 3 inches by 5 feet 2 inches, which is exquisitely hand-embroidered in silver, gold, and silk, with flowers and the tablets of the Decalogue borne upon clouds (the symbol of the Divine presence). A top piece of the Holy Ark, of red velvet, made in England in 1749 and measuring 2 feet 8 inches by 8 feet 1 inch, is adorned in heavy silver appliqué work with the principal parts of the Tabernacle and Temple, viz, the golden frontlet of the high priest, the table of shewbread, the laver, the Ark of

the Covenant with the two tables of the Decalogue, above which are two cherubim, the altar of incense, the candlestick, and the breast-plate of the high priest, the whole being surmounted by the three crowns of the Law, the Priesthood, and the Kingdom, and inclosed between wings which symbolize the presence of God. Next follow the articles used on feast days, such as cups, covers and spice boxes of the Sabbath; a complete set of embroidered tablecloths, silver, glass and china ware for the semiritual Passover meal; shofar, lulab, and ethrog, and numerous Hanukah lamps of silver, copper, and brass, some of them of artistic workmanship. One case is given to objects used on special occasions, such as a complete silver set of the utensils of circumcision, illuminated marriage contracts, wedding rings, slaughtering knife, etc.; and objects of the home, such as mezuzoth, mottoes, amulets, mizrahs. In still another case is a series of embroideries and tapestries depicting Bible narratives, such as the sacrifice of Isaac, Joseph in Egypt, the worshiping of the golden calf, the fight of David and Goliath, etc.

The daughter religions of Judaism, namely, Christianity and Mohammedanism, come next in sequence. The latter, in two cases, is represented by a model of a mosque, manuscripts of the Koran upon their inlaid stands, mosque lamps of open brass work, flags and tablets, some of the equipment of pilgrims to Mecca, and the costumes and utensils of several of the Dervish orders.

The Christian collection is obviously confined to the illustration of the ceremonies and usages of the ritual branches of Christianity; that is, the Roman Catholic and Eastern Churches. The former occupies an alcove of three cases. In the center is a wooden altar, 7 feet 3 inches high, dating probably from the seventeenth century, and once belonging to a Roman Catholic church in Hildesheim, Germany, which is adorned with a painting representing the Holy Family. Upon and around this altar are ranged the appurtenances of the church services, as chalice and paten, cruets, candlesticks and hanging lamps, censers and incense boats, holy-water fountains and sprinklers, cibories, and ostensory; and then the vestments for the celebration of the mass and benediction, as albs, stoles, and chasubles of fine brocade with rich embroidery in silver, a Philippine dalmatic of purple velvet embroidered in gold, a cope and veil. In the side cases are exhibited an episcopal mitre, crozier, and pectoral; processional crosses and banners, reliquaries, religious medals, statuettes and plaques representing the Virgin Mary and several saints; devotional objects, such as scapulars, rosaries, prayer books, votive offerings and amulets. Monastic life is shown by the habits of several orders, disciplinary girdles, scourges, etc., while in a special case is a lay figure draped with the costume of the great fraternity of the Misericordia in Italy. Another altar from Hildesheim, 15 feet in

height, which could not be inclosed in a case, is installed in the center of the western end of the gallery, facing the rotunda. It is constructed in a combination of the Gothic, Renaissance and Rococo styles, and is adorned with two paintings, one above the other, the upper representing St. John the Evangelist holding the chalice of the Lord's Supper, the lower the assumption of the Virgin Mary.

The Eastern Church, in one case, is illustrated by the ecclesiastical vestments of a Greek Catholic monk and a Russian and Armenian priest; the staffs or croziers of a Greek Catholic bishop and an Armenian patriarch; an altar cover; a set of musical instruments used in the service of the Armenian Church, and a series of Russian icons. One of these icons, representing the Virgin with the Infant Jesus, is covered with a silver-gilt plate of chased work to represent the clothing, with apertures for face and hands, and studded with fresh-water pearls, emeralds, ruby spinels, and garnets, which date from the eleventh to the fourteenth century. The folding doors are adorned with miniatures depicting scenes from the lives of Christ and Mary, and were painted by the artist who designed and decorated the cathedral of Nizhni Novgorod, about 1645.

Passing to Asia, the first case is devoted to Brahmanism, the religion which sways the millions of India. The collection comprises a set of marble images of the so-called *Trimurti* gods and their suites, of the incarnations (*avatars*) of Vishnu and some of the minor divinities. Deserving of special notice are two finely carved stone steles representing Vishnu and his retinue and marble statuettes of Parvati and the sacred cow, exquisitely painted and gilded. Temple utensils, such as lamps, bells, vases, and cruises, illustrate some of the Brahmanic customs, and caste marks give opportunity for explaining the caste system, which plays such an important part in the religious, political, and social life of India. The contemplative and ascetic element of Hinduism is portrayed by a series of terra-cotta models of Yogis and ascetics in various attitudes. In a special case is a complete set of brass utensils used in Hindu family worship, and the sacred writings of Brahmanism are represented by a facsimile of a bark manuscript of the Atharva Veda of the seventeenth century.

Of Buddhism, the offspring of Brahmanism, there is an exceedingly rich collection, filling two alcoves and one special case. It contains many representations of Buddha, in bronze, stone, and shells, and carved and lacquered wood, some of which have much art value. The Sakya sage can be seen in the Burmese, Sinhalese, Japanese, and Tibetan conceptions of him—sitting in meditation, preaching, blessing, and even reclining. A magnificent seated statue of Buddha in bronze, 3 feet high, cast in Ise, Japan, A. D. 1648, with an engraved inscription, rests on a pedestal outside the cases. In addition are figures of temple guards (Nios), various divinities,

monks, and saints (*arhats*). The elaborate ritual of Buddhism is illustrated by a large number of musical instruments from China, wooden and ornamental lacquered drums from Japan, temple lanterns, cruises, candlesticks, censers, rosaries, prayer wheels, etc. Of the several models of Buddhist temples may be mentioned that of the Wat Chang pagoda, the most magnificent edifice at Bangkok, Siam, a gift of the Marquis Visuddha, minister of Siam to England, which occupies a special case. The sacred literature of Buddhism is represented by the Siamese edition of the *Tripitaka*, presented by the King of Siam.

A collection illustrating some of the rites and ceremonies of the Parsees or Zoroastrians in India is exhibited in a special case. It comprises a nickel-plated brass set of the utensils for keeping up the perpetual sacred fire, offering trays, religious costumes, sprigs of the sacred haoma plant, and a fine wooden model of the Tower of Silence on which the Parsees lay out their dead. Shintoism, the primitive national religion of Japan, is represented by a collection of shrines and their contents, as the *go-hei*, mirrors, saki cups, two engraved swords in scabbards of cloisonné and lacquer, masks, and votive tablets.

One Kensington case contains a Korean sorcerer's outfit; another, a collection of amulets, ranging from some that were used by the ancient Egyptians to such as have been found among the Negroes in this country; and, a third, a collection of oriental manuscripts (Koran, a Samaritan Pentateuch, and parts of the Ethiopic Scriptures) belonging to the S. S. Howland collection.

A series of photogravures and prints arranged on either side of the high altar in the center gallery supplements and completes the religious exhibit on the gallery.

In the rotunda two colossal wooden images of Vishnu and Buddha, both from Ceylon, attract the attention of the visitor. The rotunda also contains the splendid S. S. Howland collection of Buddhist religious art, already mentioned. Assembled by Mr. Howland during his travels abroad, which extended from Iceland to Burma, most of the objects were obtained by him from their original possessors. Among its contents are a considerable number of Buddha images in teakwood, bronze, and alabaster, gilded and incrusted with colored stones; several lacquered shrines containing figures of Buddha and attendants; figures of Buddhist saints (*arhats*) and monks, ornamental begging bowls; two superb bronze temple lamps of open fret-work, about 4 feet in height, from Tibet; a sacred book written on palm leaves; a howdah, or saddle, of the sacred white elephant; the cabinet of the King of Burma, of carved open woodwork, gilded and inlaid with pieces of glass; and some Chinese and Japanese lacquered and porcelain figures.

A considerable collection of casts of Greco-Roman sculptures, including statues and busts of the divinities, as also votive and sepulchral steles and tablets and bas-reliefs depicting mythological scenes, is exhibited in the new building of the Museum in connection with the display by the division of archeology.

MUSICAL INSTRUMENTS.

One of the most popular and interesting of the subjects embodied in the classification of 1881 is that relating to instruments of music, of which a very good presentation, comprising examples from both aboriginal and civilized peoples, was soon effected. The collection now illustrates fairly well the range and development of these instruments and ranks among the best and most comprehensive in this country. In fact, in many instances, especially as to scientific arrangement, it has been used as a prototype by other museums. After occupying for a long period the wall cases in the north hall, under unfavorable conditions, it was transferred near the close of last year to the northwest court, where the collection as a whole, as well as the individual pieces, may be studied more advantageously. The new installation is in the deep and practically continuous wall case which surrounds the court, broken only at the entrance and in the middle of the opposite side of the room, the latter for the insertion of one large piece of the series. With only table cases on the adjacent parts of the floor, the general view is unobstructed and the lighting excellent. The number of instruments displayed is about 1,200, but there are still others in storage.

The classification, based upon the structure of the instruments, which determines the character of the sound-producing vibrations, is in four general divisions. The arrangement of the collection begins on the left of the entrance and is continued systematically with but a single exception. The first division comprises the vibrating sonorous instruments, such as bells, castanets, cymbals, gongs, musical glasses, rattles, triangles, tuning forks, vibrating tongues, and xylophones. In the second division are comprehended the vibrating membranes, as in the drums and tambourines. Vibrating strings of gut, fiber, or wire compose the third division, which is subdivided into open and stopped strings. In the former—the harp, for example—the string can have but one tone in playing, while in the latter the tone may be changed by means of the fingerboard. There are also further subdivisions, according to the method of producing the vibrations. Strings may be rubbed with a bow, as with fiddles, or rubbed by a wheel, as with hurdy-gurdies, or picked or plucked, as with harps, lyres, psalteries, lutes, guitars, and banjos. Spinets and harpsichords are plucked by means of mechanism connected to a keyboard. Dulcimers are plucked by striking with hammers, and

clavichords and pianos are played by means of a keyboard. The highest development of stringed instruments is shown in the stopped class, whose arrangement admits of shades of expression. The fourth and last division, covering vibrating columns or currents of air, is subdivided, according to the method by which the air is set in vibration, into flutes, whistles, etc.; horns, simple, with finger holes, keys or slides; and reeds which are single or double, and further distinguished as beating reeds, free reeds, ribbon reeds, and inverted double reeds.

This classification is simple and easily grasped by the visitor, and it will be seen that instruments which are preferred by both civilized and uncivilized peoples may be grouped together and the different materials and styles of art form an interesting picture. Upon no other possession of man has there been a greater effort to render grateful to the sight objects designed for another purpose. Especially worthy of note is an old English pipe organ which was brought to the Virginia colony in 1700 for the Episcopal Church at Port Royal, and later placed in Christ Church, Alexandria, where it is thought to have been in use when Washington was an attendant. It was subsequently taken to Shepherdstown and thence to St. Thomas Church at Hancock, Md., where it remained until 1906, when it was presented to the Museum by the vestry.

OPERATIONS OF THE YEAR.

APPROPRIATIONS.

The maintenance and operations of the National Museum for the year covered by this report, namely, from July 1, 1913, to June 30, 1914, inclusive, were provided for by the following items of appropriation in the sundry civil act approved June 23, 1913:

Preservation of collections	\$300,000
Furniture and fixtures	50,000
Heating and lighting	50,000
Building repairs	10,000
Purchase of books	2,000
Postage	500
Printing and binding	37,500
 Total	 450,000

BUILDINGS AND EQUIPMENT.

The greatest extent of repair work was demanded by the Smithsonian building, some parts of which, especially the roofs and windows at the western end, were badly damaged by the storm of July 30, 1913. About 400 running feet of the old and worn-out copper gutters on the main section of the building were also replaced with the best quality of tin, which, if kept painted, should give no further trouble. In the interior of this building terrazzo pavement was substituted for the old splintered wooden floors in the west hall and connecting range, and the walls and ceilings in the same halls, which had become much defaced, largely from the heavy downpour of rain in the great storm, were repainted.

With regard to the older Museum building, the exterior work was almost wholly confined to the roofs, and consisted, besides miscellaneous repairs, of the painting of all exposed metal surfaces, including the cornices, pinnacles, ornaments, etc. The principal repairs in the interior were in the direction of pointing up and repainting damaged and defaced walls and ceilings, and painting the woodwork of windows, mainly in the exhibition halls. In the new building the interior repairs were entirely of a miscellaneous and minor character. Externally the woodwork of all windows in the ground and third stories was painted, and also some of the metal windows in other stories. The roofs and gutters likewise received some attention.

The power plant was closed down as usual during July and August, and the electric current required during that period was purchased from a local producing company at the low summer rate of $2\frac{1}{2}$ cents a kilowatt hour. This arrangement, which was an exceedingly economical one, gave opportunity for overhauling and cleaning the plant and putting it in good condition for the remainder of the year, but no actual repairs of great moment were called for. During this time the employees connected with the operation of the plant were also given the greater part of their annual leave. Owing to an increase of about 80 cents a ton in the cost of coal, there was a distinct increase during the year in the relative cost of heating and of generating electric current, as also in the minor operations connected with the plant, but, on the other hand, much less current was required to be generated than during either of the two previous years. The amount of coal, entirely bituminous, consumed in the boilers was 2,936 tons, and steam was generated for heating purposes from October 13 to May 5, inclusive. Further changes have been made and are still in progress in connection with the distribution of steam to the older main buildings and the outlying buildings, whereby greater economy and more satisfactory results are certain to be obtained. The ice plant continues to give satisfaction, and its capacity is fully equal to the needs of the Museum. The output of ice for the year was 346.8 tons, at a total cost of \$867.92, or a rate of \$2.55 a ton.

The watch clock system in the two older buildings, which had been in use for nearly a third of a century and had in many respects become unreliable, was replaced by one similar to that recently installed in the new building. The clock records cover a period of 24 hours with spacings at 5-minute intervals; there are 24 magneto generator stations and connections with 2 Mutual District Messenger Co.'s turn-in boxes, 1 in each building. All of the stations are required to be visited and a call sent in from each at regular intervals during the night rounds of the watchmen, which insures a positive record that all parts of the buildings have been inspected at the times fixed by the regulations. The fire alarm system used in the older Museum building was extended to the Smithsonian building by establishing 3 turn-in stations, 1 in the middle of the building and 1 at each end, and installing a fire alarm gong at the north entrance. The systems in the two buildings are connected. The addition of automatic elevator door controls to the passenger elevators, referred to in the last report, was completed for both the north and south elevators.

The principal articles of furniture obtained during the year consisted of 230 exhibition cases, 278 storage cases and pieces of laboratory furniture, 124 pieces of office and miscellaneous furniture, 2,396 unit specimen drawers of wood, 600 insect drawers, and 2,175 miscellaneous specimen drawers. The greater part of this furniture was

constructed under contract, the remainder being built in the Museum shops, which were also called upon for much miscellaneous and repair work. A number of old cases and other articles which had outlived their usefulness were condemned and disposed of. An inventory of the furniture on hand at the close of the year records 3,561 exhibition cases, 6,848 storage cases and pieces of laboratory furniture, 3,361 pieces of office and miscellaneous furniture, 40,056 unit specimen drawers of wood, 4,712 unit specimen drawers of steel, 8,439 insect drawers, and 19,751 miscellaneous specimen drawers and boxes of various kinds.

A decision having been reached as to a form of curtain suitable for the large windows in the exhibition halls in the new building, such as were most urgently required were installed during the year. The necessity for the use of curtains arises from the failure of the ground glass to sufficiently protect the colors of specimens, more especially in the zoological and ethnological exhibits. Difficulty was encountered because of the exceptionally large size of the windows and of the fact that each contains two large movable panes near the bottom which require to be kept open in warm weather. In accordance with the system adopted, the main curtains on the first floor, of unbleached muslin, reach from the window top to the upper level of the ventilating openings, and are followed by shorter curtains covering the lower part of the windows. In the second floor, however, the curtains, also of the same material, extend continuously the entire length of the window. All are hung on nickel-plated brass rods and are in pairs, with a simple device for pulling them to the sides. Curtains of this character were installed on the south and west sides of both floors west of the south pavilion and in the court windows adjoining the collections of zoology and ethnology. In addition, and as a very necessary protection for the mammal and bird exhibits, thin black curtains were introduced between the muslin curtains and the glass surface of the windows on the first floor of the west wing and on both sides of the adjoining range. These black curtains, which practically cut out all of the light, are not intended to be used until after the time for closing, or from 4.30 o'clock in the afternoon until 9 o'clock in the morning, during which period for a considerable part of the year the sun's rays continue effective during several hours. It was also found necessary to provide cambric shades for the windows in the north west range of the older Museum building, containing the period costume collection, in order to prevent the fading of the delicate tints in many of the fabrics there displayed.

COLLECTIONS.

The number of accessions received during the year was 1,493, comprising, besides certain loans, approximately 337,705 specimens,

which were apportioned among the respective branches to which they pertained as follows: Anthropology, 14,879; zoology, 257,816; botany, 44,675; geology and mineralogy, 3,648; paleontology, 13,045; textiles and animal and vegetable products, 2,930; mineral technology, 505; and the National Gallery of Art, 207. Numerically, the division of insects received much more than one-half the total acquisitions, namely, over 214,000 specimens. The loans aggregated 2,280 objects, of which 112 consisted of paintings and other articles for the National Gallery of Art, practically all the remainder being intended for exhibition in the divisions of ethnology, archeology, and history.

Material was also received for examination and report to the extent of 859 separate lots, each containing a greater or less number of specimens, of which 59 lots related to anthropological subjects, 249 to biological, and 551 to geological.

DEPARTMENT OF ANTHROPOLOGY.

Ethnology.—Of the 62 accessions in ethnology, the most notable was a collection gathered by Dr. W. L. Abbott in northern Dutch New Guinea, the Moluccas, and Ambon of the Ceram group, during a trip on a trading vessel and while making landings to discharge cargo. The results of this interesting journey, aggregating more than 500 objects which reached the Museum as a gift, indicate that Dr. Abbott's time was most effectively employed. They comprise baskets, mats of exquisite workmanship, bags, belts, necklaces, hair, ear and breast ornaments, bark clothing, carved wooden dishes, stone mauls, adzes, bows, arrows, shields, carved and painted canoe prow ornaments, carved wood idols, spirit flutes, etc. A number of baskets were also received from the Abbott expedition to eastern Borneo, conducted by Mr. H. C. Raven. Probably the most thorough ethnological collection that has come to the Museum from Alaska was a series of over 630 objects obtained on St. Lawrence Island, by Dr. Riley D. Moore, of the Museum staff. It consists of clothing of men, women, and children, a large number of hunting weapons, models of houses, traps, domestic utensils, tools of all classes, ivory carvings, drums, religious objects and paraphernalia, examples of medicines, etc. Many articles of Siouan ethnologica assembled by Miss Frances Densmore, of Red Wing, Minn., are of particular importance since their locality and tribal origin are properly recorded, making the specimens useful for identifying other material from the Plains Indians regarding which the present data are incomplete.

Other noteworthy accessions relating to North America were a series of bromide enlargements of American Indians from negatives taken by Dr. Joseph K. Dixon during the Rodman Wanamaker expedition, and presented by Mr. Wanamaker; a large number of

Indian baskets, bequeathed by Mrs. Mary Manning Fletcher; 19 Navaho blankets and 3 models of blanket frames assembled by the late Dr. Washington Matthews, United States Army, and used by him in the preparation of his work on Navaho weavers, published in the Third Annual Report of the Bureau of American Ethnology, besides a number of miscellaneous objects, received as a loan from Mrs. Matthews; many Mexican relics, consisting of ivory carvings, crucifixes of wood, ivory and metal, and photographs of historical subjects, lent by Maj. Harry S. Bryan, of Mexico City; and a collection of various kinds of objects pertaining to the Spokane, Colville, Okinagan, and Columbia Indians, lent by Mr. Clair Hunt, of Colville, Wash. The division is indebted to Capt. J. R. Harris, United States Army, for a gift of bows, arrows, swords, an alphabet tablet, snares, boxes, etc., from the Moros of Mindanao; and to the Museum für Völkerkunde, Leipzig, Germany, for a collection of material from southeastern Africa, analogous to articles illustrated in the important works of Prof. L. Frobenius, obtained in exchange.

The exhibition series received many additions and improvements. The Hopi family group was completed and installed. The Tehuelche family group, the Zuñi potter, the Navaho silversmith, the Navaho weaver, the Maya-Quiché and Apache subfamily groups, and several single figures were transferred to the new cases specially built for them, this work involving a considerable amount of repainting of figures and readjustment of groundwork. The Igorot group and Kiowa children group were taken down preparatory to extensive changes necessary to place them in a more satisfactory condition. The synoptic series, illustrating the development of the several types of artifacts, which had been in storage for a number of years, was installed in 13 cases, interspersed among the lay-figure group cases in the east and west halls. Progress was also made in other directions, improvements being carried out in installation, exhibits reassembled more effectively and in more accurate geographical relations, and many specimens repaired. Much time was also given to the preparation of case and individual labels, many hand-written ones being used pending their printing.

Plans were made for and work actively begun on an ethnological exhibition for the Panama-Pacific Exposition at San Francisco, figures for two large family groups having been completed, and materials for four floor cases selected. The exhibit will cover a space of approximately 6,000 square feet. The curator also undertook for the Panama-California Exposition at San Diego the supervision of the preparation of models of 10 village groups, illustrating the aboriginal architecture of North and South America. Five of these groups were finished.

The curator, Dr. Walter Hough, continued the preparation of a catalogue of the Hopi-Pueblo Indian collection, of which the

National Museum has the largest in existence, and the manuscript is expected to be ready for the press within a year. His bulletin on the "Culture of the Ancient Pueblos of the Upper Gila River Region, New Mexico and Arizona," was completed and published.

American archeology.—Among the more important of the 49 accessions received by this division were the following: Mr. Chester W. Washburne, collecting for the Smithsonian Institution, mainly in old Indian camp sites and caves in the valleys of the Rio Negro and Santa Cruz in Patagonia, South America, transmitted several hundred specimens, including a roughly shaped mortar and pestle, a disk-shaped rubbing stone, leaf-shaped blades, various chipped implements of usual types and fragments of pottery vessels. An interesting collection of flint implements, grooved axes, celts, leaf-shaped blades, projectile points, and other stone objects from Jackson County, Mo., was received as a gift from Mr. J. G. Braecklein, of Kansas City; and a series of antiquities from Porto Rico, both originals and casts, was obtained in exchange from Mr. George G. Heye, of New York. Mr. Neil M. Judd, of the Museum staff, during an investigation in Guatemala, secured a number of interesting objects, including ancient pottery vessels, examples of earthenware made in modern Guatemalan potteries and sold as antiquities, stone implements, a modern ceremonial mask attributed to the Maya Indians of Chiapas, a large woolen blanket woven by Quiché Indians, and two small wooden carvings, one of a friar, the other of a cavalier, and both doubtless pertaining to the early Spanish occupation of the country. A choice collection purchased of Mr. D. I. Bushnell, jr., of Charlottesville, Va., comprises large chipped flint blades from Missouri and Illinois, showing the polish of long-continued use in cultivating the soil; chipped celts and chisels with ground cutting edges, from the same States and Tennessee; hematite implements from Missouri, and other exceptionally fine specimens. From Mrs. William Elroy Curtis, of Washington, a large series of archeological objects was received as a loan. It includes clay spindle whorls from the Valley of Mexico, a carved stone metate and muller from Costa Rica, a string of beads made of rock crystal from Colombia, and earthenware bottles, jars, cooking pots, bowls, figurines and prayer sticks, wooden spindle whorls, a carved stone llama, hairpins of copper and silver, and other objects from Peru.

With the receipt of the additional cases required it was possible to carry well toward completion the further work of selecting, arranging, and labeling the exhibition collections of the division, which, as a presentation of the archeology of northern America, stands unquestionably first in the world. Much attention was given to the reserve collections, and for the first time the large accumulation

of molds of antiquities made during the past 50 years has been properly assembled, classified, and labeled. Considerable time was also devoted to the selection and listing of exchange material, six important series of objects having been sent out or prepared for sending. The work of the division was much increased during the year by the necessity of engaging in the preparation of exposition exhibits.

Research work was confined to the continuation by the head curator of the preparation of text and illustrations for the handbook of American antiquities which is intended for publication by the Bureau of American Ethnology. Extended studies, however, were made by Mr. Kenneth M. Chapman, of Santa Fe, N. Mex., who is collecting data regarding the evolution of ornamental designs as applied to earthenware, and the examination of specimens by other students was carried on to a limited extent.

Old World archeology.—Although limited in number the accessions of the year contained a considerable amount of exceptionally valuable material. Most prominent among them, received as a gift from Mr. S. W. Woodward, of Washington, was a drawing in color of a mosaic map of Palestine and adjacent regions, the original of which formed the floor of an old church in Medeba, a town in the former territory of Moab, often mentioned in the Old Testament. The work dates from the fifth or sixth century A. D., and is not only the oldest map of Palestine known, but also the oldest detailed map of any country. Unfortunately, on the occasion of the rebuilding of the church in 1896, when the mosaic was discovered, it was much damaged, but the portion preserved includes most of the places connected with Bible history from Nablus in the north to the Nile in the south. Of perhaps equal interest was a collection of ancient coins and other objects made by the Rev. C. S. Sanders while living as a missionary in Beirut, Syria, and lent by his daughter, Mrs. John Paul Tyler, of Baltimore, Md. It comprises, among other items, 19 Greek coins of Alexander the Great and his successors in Syria, 66 Greco-Roman coins—that is to say, coins issued by the Greek communities of Syria and Asia Minor under Roman sovereignty—34 coins of the Byzantine Empire, 1 Phoenician coin, 8 Armenian coins, 45 Mohammedan coins of the Turcoman dynasties of the eleventh to the thirteenth centuries in central and western Asia, and 1 medal of St. George; besides 3 Persian and 4 Syro-Phoenician seals, 2 Syro-Phoenician bronze animal figurines, and 1 Egyptian scarab. A series of Egyptian antiquities presented by the Egypt Exploration Fund, through Mr. S. W. Woodward, a contributor to the Fund, includes an Egyptian limestone stele of Neb-sum-menu, measuring $14\frac{1}{2}$ by $8\frac{1}{2}$ inches, 3 well-preserved mummies of the ibis, a pithos, 2 other funerary vases, and the eggshell of an ibis.

Valuable relics of the Stone Age in Europe, consisting of 51 originals and 17 casts of pre-paleolithic and 74 paleolithic implements of Chellean stages of the paleolithic period, were received in exchange from Prof. A. Rutot, of the Royal Museum of Natural History of Belgium. A collection of antiquities, also obtained in exchange, from the Zoological Museum of the University of Copenhagen, Denmark, through Mr. Herluf Winge, director, comprises 65 stone implements, 47 shells, 2 pottery fragments, and 1 bone needle, from the kitchen middens of Denmark, and 59 animal bones from the kitchen middens of Iceland. Sixty-four paleolithic flints (Mousterian type), 10 animals bones and 1 piece of breccia from the La Quina cave, France, were contributed by Dr. Henri Martin, of Paris, France; and a collection of early stone implements recently found in two caves of Jersey, England, were presented by Dr. R. R. Marett, of Exeter College, Oxford, England.

The routine work was chiefly a continuation of the sorting and arrangement of the material of the Stone Age, including the preparation of a slip inventory containing the necessary data for the card catalogue and labels. The addition of 16 table cases entailed the rearrangement of a part of the exhibition series and permitted a better and more adequate display of the collections. About 300 ancient coins were determined and installed, and a considerable amount of material, especially of the Stone Age, which could not be exhibited, was placed in the bases of exhibition cases, where it is convenient for study and reference.

Physical anthropology.—The accessions deserving of special notice, arranged somewhat in the order of their importance, were as follows: A collection of skeletons and skulls of Eskimo and Aleuts made for the Museum, under the direction of the curator, by Dr. Riley D. Moore; 21 crania of Buriats, the most important native tribe of central Siberia, and 5 Mongolian crania from the vicinity of Kiakhta, obtained for the Museum by Prof. A. V. Bartašov, of Troickosavsk, Siberia; 16 anatomical specimens and 12 casts of the brains of prominent persons, received in exchange from Prof. D. P. von Hansemann, of the Rudolf Virchow-Krankenhaus, Berlin, Germany; 5 skeletons and 2 skulls from Tennessee and Alabama, presented by Mr. Clarence B. Moore, of Philadelphia, Pa.; and 10 recent skulls, with 6 old skeletons and 2 skulls, from the district of Mělník, Bohemia, collected for the Museum by Prof. J. Matiegka, of the Bohemian University, at Prague. Three valuable additions were made to the collection of casts of early man in Europe. They consisted of the skeletal remains of the Spy Man, obtained in exchange from the Université de Liège, Belgium, through Prof. Charles Fraipont, conservator of its museum; a cast of the La Quina skull, also an exchange, from Dr. Henri Martin, of Paris, France; and a cast of the

skull of La Chapelle-aux-Saints and of its brain cavity, purchased from Dr. F. Krantz, of Bonn, Germany. Three skulls of Patagonians were received as a gift from Mr. Chester W. Washburne, of Washington; and a neolithic skull from Belgium was presented by Prof. A. Rutot, director, Musée d'Histoire Naturelle de Belgique, Brussels.

Considerable progress was made in cleaning, repairing, cataloguing, and arranging the large Peruvian and other collections assembled during the last four years. Every specimen received by the division in recent years has also been examined by the curator, identified as to sex, and its principal characteristics noted, so that the catalogue of the division is gradually becoming more than a mere enumeration. The selection of especially valuable specimens for exhibition has likewise received attention.

The investigations by the curator, Dr. Aleš Hrdlička, relative to "thoroughbred" white Americans, namely, those of at least three generations in this country on each side, was continued, but, owing to scarcity and comparative inaccessibility of subjects, another two years may be required for their completion. They promise results of much interest. A special study undertaken was one bearing on the history of physical anthropology in America, and more particularly in the United States, designed in part for presentation at the forthcoming Congress of Americanists and in part for use in the preparation of the "Handbook of Physical Anthropology," which will be published by the Bureau of American Ethnology. The main research work of the year, however, was that involved in completing the memoir on the "Oldest Authentic Skeletal Remains of Man" in existence, which is being printed in the annual report of the Smithsonian Institution. The curator also made three shorter reports, as follows: On two crania from Saline Creek, Mo., for Mr. D. I. Bushnell, jr.; on parts of crania and skeletons from Lake Worth, Fla., for Mr. O. Randolph; and on recent skeletal collections from Tennessee, for Mr. Clarence B. Moore.

Among persons who visited the division for purposes of study or for instruction were Dr. Ernest A. Hooton, of the Peabody Museum of Harvard University; Dr. James S. Foote, of Creighton Medical College, Omaha, Nebr.; Dr. M. Reicher, of the Anatomical Laboratory of Johns Hopkins University; Prof. George F. Eaton, of Yale University; Dr. R. W. Shufeldt and Dr. C. A. Hawley, of Washington; Dr. G. Werley, of El Paso, Tex.; Dr. W. W. Evans, of Hamilton, Va.; Mr. Ralph Linton, of Philadelphia, Pa.; Dr. G. Hardy Clark and Dr. Margaret V. Clark, of Waterloo, Iowa; and Dr. George A. Wilson, of Cleveland, Ohio.

Mechanical technology.—The addition of 20 models of steamboat propellers, made from descriptions and drawings furnished by the

Museum, to the series already on hand greatly increased the importance of the exhibit illustrating the development of the screw propeller from 1681 to 1890. A circular sundial adapted for the latitude of Peking, China, 40° north, was received as a gift from Mr. Claude L. Woolley, of Baltimore, Md. It is entirely inscribed in Chinese characters, including the motto "With ceremony he delivered to the people the reckoning of time," taken from the Book of History, and referring to the work of Yao, who first introduced the republican form of government into China, about 2000 B. C. For these inscriptions both Mr. Woolley and the Museum are indebted to Mr. Yung Kwai, counselor of the Chinese Legation at Washington. A gold medal presented to Joshua Follensbee, chief engineer, United States Navy, by the Chamber of Commerce and citizens of New York, in commemoration of the part taken by him in laying the first submarine telegraph cable between England and America, in 1858, was lent by Mr. Frank Follensbee, of Clarendon, Va.; and a set of German coin scales made by Johann Daniel Ellinghaus, in Radevormwald, Germany, which had been in the possession of the Lindinger family, of Buckeburg, Germany, for about 250 years, was purchased.

The following firearms were presented: One Ross magazine sporting rifle, model of 1910, caliber .28, the magazine holding four cartridges, by the Ross Rifle Co., of Quebec, Canada; one Savage magazine sporting rifle, caliber .22, the magazine holding six cartridges, by the Savage Arms Co., of Utica, N. Y.; one Remington repeating rifle, caliber .30, with tubular magazine holding six cartridges, and one Remington autoloading, five-shot, repeating rifle, caliber .35, by the Remington Arms-Union Metallic Cartridge Co., of Ilion, N. Y.; one Winchester repeating rifle, model of 1894, caliber .30, with tubular magazine holding eight cartridges, and one Winchester repeating rifle, model of 1895, caliber .405, with box magazine holding four cartridges, by the Winchester Repeating Arms Co., of New Haven, Conn.; and a single-barrel pistol, caliber .50, percussion cap lock, double set-trigger, Damascus barrel, marked "Dumas A Lyon," and a double-action revolver, caliber .45, marked "G. Mercenier," by Rutgers Ives Hurry, of New York. The War Department deposited a United States Army magazine rifle, caliber .30, model of 1903, with improvements to 1914; and five guns, a gun barrel, and a case containing gun barrels were received as a bequest from Miss Lucy H. Baird.

The collections of the division have undergone much change in location and arrangement, with attendant improvement in convenience and effectiveness. They now occupy the north east range, the east hall, the north east court, and portions of the south east range and west hall. Eighteen upright floor cases received during the year

have been advantageously used for the reinstallation of important exhibits.

The large collections illustrating the beginning and development of the Bell telephone; those representing the inventions of Mr. Emile Berliner in the subjects of telephones and talking machines; the original electrical apparatus invented by Mr. Elihu Thomson, and the experimental apparatus relating to various phases of electrical art devised by Mr. Moses G. Farmer, have been properly grouped, installed in new cases, and provided with suitable labels. The exhibition of historical United States Army rifles and muskets, covering the period from 1800 to the present time, was removed to the northeast court, where the other arms have also been systematically arranged, and decided advance is being made in the presentation of this subject, which is rapidly growing in interest. The Langley aerodrome engine, the Scott phonograph, the Elihu Thomson arc-light dynamo, the Haynes automobile engine, and the cream separators were installed in separate cases; while the original Haynes gasoline automobile, the Balzer gasoline automobile, the models of Octave Chanute's gliders, and Dr. A. F. Zahm's experimental aerodynamic models were arranged in a single large wall case. In all classes of exhibits new labels are being provided, and this important work is being pressed as rapidly as the facilities for printing allow.

Ceramics.—Owing to lack of space and of opportunity for organizing and appropriately displaying collections of objects in metal and glass, as well as in certain other classes of small art work, these subjects have continued to be mainly associated and exhibited with ceramics in the gallery of the northeast court in the older Museum building. It is hoped, however, that a more satisfactory arrangement can soon be brought about.

The following were the principal additions of the year: Seventeen objects, including 2 Moorish platters, 2 large Chinese vases, a Satsuma vase, a Japanese porcelain dish, a large bronze Japanese vase, and a Japanese mythological figure in bronze, received as a bequest from Miss Lucy H. Baird; 12 pieces of enamel and terra cotta, from the estate of the late Homer N. Lockwood, of Washington; 4 pieces of pottery from the Grand Feu Pottery Co., of Los Angeles, Cal., presented by the potter, Mr. Cornelius Brauckman; and an Italian silver filigree bonbon basket of superior workmanship, received as a gift from Miss Christine W. Biddle, of Philadelphia, Pa. The following loans were from residents of Washington: Twenty-three pieces of English pink luster ware of the eighteenth century, from Mrs. Alfred S. Gillett; and 11 pieces of Bohemian glass and a decorated terra-cotta pitcher of Doulton ware, from Miss Jennie M. Griswold.

Graphic arts.—The more important contributions were as follows, namely: Materials demonstrating the process of making three-color half-tone plates, from the Zeese-Wilkinson Co., of New York; an exhibit containing half-tone screens from 50 to 400 lines to the inch, and a circular screen for color work, from Mr. Max Levy, of Philadelphia, Pa.; a Bruce type-casting machine and a hand mold representing the early methods of type casting, from the American Type Founders Co., of Jersey City, N. J.; examples of rotary intaglio printing, the first made in this country, as well as later developments of the American patents, from Mr. Charles W. Saalburg, of New York; a collection illustrating the process of and the materials used in the manufacture of printing ink, from Philip Ruxton, of St. Paul, Minn.; an autochrome plate with progressive proofs of the same made by the Colorplate Engraving Co., from Dr. Ulysses S. Kahn, of New York; and 91 engraved bookplates from the estate of C. W. Sherborn, the engraver, through his brother, Mr. Charles Davies Sherborn, of London, England.

In view of the extensive changes in progress in the halls of the Smithsonian building assigned to this division, not only was the work of installation brought to a standstill, but it also became necessary to place the greater part of the exhibition collection temporarily in storage. With the completion of the renovations and improvements, however, the conditions surrounding the exhibits should be much improved. Notwithstanding the inconveniences thus occasioned, much work was done upon the collections, including the preparation, remounting, and labeling of display material.

The section of photography also came into possession of valuable exhibition material. A collection of talotypes, also called calotypes, made by the inventor, Henry Fox Talbot, was presented by Mr. C. H. Talbot, of Chippenham, England. A series of photographs of stellar spectra, apparatus, etc., was contributed by the Harvard College Observatory, through Prof. E. C. Pickering, director; and a fine lot of photomicrographs of disease germs, illustrating the use of photography in laboratory investigations at the Rockefeller Institute for Medical Research, was received as a gift from that institute. The Alfred Stieglitz collection of pictorial photography was purchased at a nominal price from Mr. Stieglitz, of New York, to whom the Museum is greatly indebted. Mrs. Julian James, of Washington, presented a large series of graphoscopic and stereoscopic views, and the Eastman Kodak Co., of Rochester, N. Y., contributed an excellent representation of the history of the hand camera. Through the kind offices of Mr. George W. Harris, of Washington, a portrait from each of nine of the leading portrait photographers of the country was secured to form a group illustrative of professional portraiture.

The installation of the photographic exhibition, which occupies the gallery of the northwest court in the older Museum building, was so nearly completed for the material on hand that it was opened to the public late in June, 1913. The leading features of this important display are described elsewhere.

Medicine.—No progress of any moment has recently been made in this important division, either in the matter of acquiring new material or of further classifying and arranging the collections, owing to lack of means. Dr. James M. Flint, United States Navy, retired, the originator of the collection and for a quarter of a century its honorary curator, left the material in excellent condition when he relinquished his position two years ago. Since then every effort has been made to prevent deterioration, pending the time when the affairs of the division can again be actively taken up. The precautions which this entails have been under the direction of Dr. Walter Hough, who has personally given attention to many of the details. The collections were consulted last year, as they had been in the past, by members of the Bureau of Chemistry of the Department of Agriculture, but with a proper organization of the division the importance of its possessions and opportunities will certainly receive widespread recognition.

Musical instruments.—Of the few accessions received by this section only one was especially noteworthy. This is a violano-virtuoso, an instrument which mechanically plays a violin with piano accompaniment. It is a high product of modern inventive skill, which has succeeded in rendering violin music of great complexity in the style and purity of an artist, and came as a gift from the Mills Novelty Co., of Chicago, Ill.

The collection of musical instruments, through a slow but constant growth, has now reached a stage where it is to be regarded as of exceptional importance. For many years it occupied the wall cases at the sides of the main hall of history, where it was much crowded and so concealed that its extent and value could not be appreciated by the public. Many instruments, moreover, had of necessity to be retained in storage. Near the close of last year, however, the collection was reinstalled in the wall cases surrounding the northwest court, where the pieces may be well observed, though they require to be better labeled. Mr. E. H. Hawley, who has the custody of the musical instruments, has completed through the letter "T" the catalogue of terms used and has begun a review of the instruments of the open hammered string class.

History.—The division of history was the recipient of many accessions, some of which were of much value, and an exceptionally large percentage were permanent acquisitions. Of special interest is a wine cooler of heavy silver plate, containing two bottle holders,

which had been a gift from George Washington to Oliver Wolcott, Secretary of the United States Treasury in 1795-1800. This piece of tableware, one of a number of the same style imported by Washington from France, is of an elliptical urn shape and is decorated on either side, at the top, with a lion's head, from which depends a small silver handle, the entire design being typical of the eighteenth century. Lent by Miss Emily Tuckerman, of Washington, granddaughter of Oliver Wolcott, it has been added to the large collection of Washington relics already in the Museum. Four American chairs of the period of the Revolution, two of which were owned by Maj. Gen. Philip Schuyler of the Continental Army, and two by Alexander Hamilton, besides two mahogany side tables and a half-round mahogany table belonging to Alexander Hamilton, and a small work table belonging to Mrs. Hamilton, were generously presented by Dr. Allan McLane Hamilton, of Great Barrington, Mass., grandson of Alexander Hamilton. With the exception of the small table last mentioned, these articles of furniture were already in the possession of the Museum as a loan. A collection of relics of Rear Admiral Charles Wilkes, United States Navy, consisting of a handsomely jeweled sword and scabbard, presented to him by the city of Boston in 1862 in recognition of his services in the detention of the British steamer *Trent*; a gold medal, awarded him by the Royal Geographical Society of London in 1868 in recognition of his services to science; a service sword carried by him while on the United States exploring expedition, 1838-1842; a uniform hat and epaulets, worn by him during the same period, together with a number of minor relics of the same expedition, were received as a gift from Miss Jane Wilkes, of Washington, daughter of the admiral. The original manuscript application for a pension and related papers, filed by Aaron Burr in 1834 before Richard Riker, recorder of the city of New York, for services rendered as an officer of the Continental Army during the War of the Revolution, were deposited by the Department of the Interior. Accompanying the application is a copy of a letter from Gen. Washington to Lieut. Col. Burr, dated October 26, 1778, giving the latter permission to retire from the service with pay until his health is reestablished. The facts in the application are attested to by the affidavits of David S. Bogart and Robert Hunter, of New York. The sword of Brig. Gen. Strong Vincent, United States Volunteers, carried by him from April, 1861, until July 2, 1863, when he was mortally wounded while in command of a brigade defending Little Round Top, at Gettysburg, was presented by Mrs. Elizabeth C. Vincent, of Chicago, Ill.

Through the bequest of Miss Lucy H. Baird, the division came into possession of a number of personal relics of her distinguished father,

Prof. Spencer F. Baird, the director of the affairs of the National Museum during the first 37 years of its existence. Among them were the instruments used by Prof. Baird in his research work, including microscopes, a spectroscope, various types of magnifying lenses, and other articles of the same general character; the decoration of the Order of St. Olaf conferred upon Prof. Baird by the King of Sweden and Norway in recognition of his services to science; and a table napkin used by Napoleon I during his banishment to Elba, a gift to Prof. Baird by an American friend of the then exile. By the will of the late Homer N. Lockwood, of Washington, the Museum received a unique and valuable collection of 152 walking canes, gathered from nearly all parts of the world and including much of particular interest both historically and as to workmanship. Mention may specially be made of a gold-mounted cane presented to Grover Cleveland by the Swiss Helvetia Society, of Elgin, Ill.; an ivory-headed cane given to William H. Seward on his visit to Alaska in 1869; and a silver-mounted cane belonging to Capt. (Rear Admiral) Charles D. Sigsbee, United States Navy, while in command of the U. S. battleship *Maine*. The National Society of the Colonial Dames of America made a number of additions to its already large and interesting collection deposited in the Museum.

The collection of postage stamps, stamped envelopes, and postal cards was increased by deposits from the Post Office Department to the extent of about 10,000 pieces, comprising all recent issues by the countries in the Universal Postal Union. The coin and medal collection also received many valuable additions; and the bequest of Miss Lucy H. Baird included about 400 photographs of scientific men, which were incorporated in the portrait collection.

The offices of the division, formerly occupying two small rooms at one side of the north entrance, were moved to more commodious quarters in the west tower, where the work called for in the various sections can more satisfactorily be carried on. The collections are reported in good condition, though in some directions their safety is difficult to maintain owing to the quantity of material, especially of fabrics, subject to the attack of insect pests.

An important task begun near the close of the year was the renovation and placing in what is intended to be a permanent state of preservation of "The Star-Spangled Banner" of Fort McHenry, lent to the Museum some seven years ago, and last year made an absolute gift by its owner, Col. Eben Appleton, of New York. When writing the story of this flag, Rear Admiral George Henry Preble, who had it in his possession for a short time, caused it to be mounted on a piece of rather heavy canvas, to which it was only partly attached. This light and much frayed piece of bunting is now being fastened to a backing of Irish linen in the same manner as were the

old flags at the Annapolis Academy a short time ago; that is to say, by means of a peculiar net stitch which covers the entire surface of the fabric and thus reduces to a minimum the strain on any one part of the flag. The silk thread that is being used for this purpose is dyed to match exactly the color it is worked over, and at a short distance the net covering is scarcely apparent.

It is also interesting to note the public installation in the northwest court of the older building of the coin and medal collections, aggregating over 6,000 examples which had previously been in storage. The installation of the stamp collection, which has been rapidly advanced, is also being made in the same court.

The paper on the Washington relics preserved in the Museum, by the assistant curator of the division, Mr. T. T. Belote, was completed, but its publication is delayed by the necessity of incorporating references to material lately acquired. Mr. Stanley Arthurs, who has been commissioned by the General Assembly of Delaware to execute for the senate chamber in Wilmington a mural painting showing the Delaware troops leaving Dover during the War of the Revolution, made a special study of the uniforms and costumes of that period in order that his pictorial work might be based on authentic data.

Period costumes.—Mrs. Julian James and Mrs. R. R. Hoes continued, with their customary zeal, their self-appointed task of securing materials for the period costume collection, and during most of the year they were closely occupied in arranging the interesting fabrics and other articles which had been received. The results of their labors, successful and most brilliant in effect, have already been described, and there only remains to be accounted for in this connection the many and valuable contributions of the year.

Of costumes of ladies of the White House, forming the central and most prominent feature of the exhibition and including some accessories, six were received. One was a gift, the others being loans. In the order of presidential administrations these contributions were as follows: A dress, kid slippers, a fan and pearl beads, worn by Mrs. John Adams, received from Miss Susan E. Osgood, of Salem, Mass. A Watteau dress, in two pieces, of pale blue silk embroidered with straw, worn by Mrs. Maria Hester Monroe Gouverneur, youngest daughter of President Monroe, received from Miss Maud C. Gouverneur. An old gold satin bodice, with blonde lace overdress and flounce, worn by Mrs. Andrew Jackson Donelson, niece of Mrs. Jackson, and mistress of the White House during President Jackson's administration, together with a tortoise-shell comb and silver filigree cardcase of Mrs. Jackson, and an invitation to the Jackson ball, Nashville, 1828, addressed to Mrs. Donelson, received from Miss Mary R. Wilcox, of Chevy Chase, Md., granddaughter of Mrs. Donelson. A blue velvet dress, lace fichu, lace and embroidered

handkerchief and fan which had belonged to Mrs. Sarah Angelica Van Buren, wife of President Van Buren's son, received from Mrs. Helen Coles Singleton Green, of Columbia, S. C. A dress of mole-colored velvet worn by Mrs. Jane Irwin Findlay, wife of Gen. James Findlay, one of the mistresses of the White House during the administration of William Henry Harrison, received from Mrs. William Torrence Handy, of Cynthiana, Ky. A dress of blue brocaded satin made by Worth in 1844 and worn by Mrs. James K. Polk, presented by Mrs. George W. Fall, of Nashville, Tenn., the niece and adopted daughter of Mrs. Polk.

As further relating to the White House, the Museum is indebted to Mrs. R. R. Hoes and Miss Maud C. Gouverneur, of Washington, both jointly and individually, for the loan of many memorials of President and Mrs. Monroe. Among the articles, which are too numerous to specify in full in this connection, are a mahogany side chair, red satin footstool, a standing dresser mirror, and a Chippendale table brought from France by Mr. and Mrs. Monroe in 1796; a superb silver chocolate pitcher and cream jug, and the only piece of Monroe china known to be now in existence; a number of badges, chiefly of the American and French revolutions; many pieces of jewelry, including articles pertaining to personal attire; a letter written by James Monroe on March 2, 1786, announcing his marriage; and a dressmaker's bill made out to Martha Washington and several articles which had belonged to Mrs. Maria Hester Monroe Gouverneur, including her seal.

Dresses other than those pertaining to the White House were received as loans, as follows: The wedding dress of Mrs. Porter, wife of Rear Admiral D. D. Porter, United States Navy, March, 1839, from Mrs. Charles H. Campbell, of Washington; a black velvet gown and the robes worn by the celebrated American actress, Charlotte S. Cushman, in her impersonation, respectively, of Catharine and Cardinal Wolsey in *Henry VIII*, from Mrs. Allerton S. Cushman, of Washington; two dresses of Mrs. Charlotte R. Myers Jackson, together with slippers, gloves, and lava jewelry, from Miss Fannie A. Jackson, of Yonkers, N. Y.; a purple satin dress of Mrs. Satterlee, wife of Bishop Henry Yates Satterlee, from Mrs. Satterlee, of Washington; the wedding dress and an evening gown of Mrs. Dewey, wife of Admiral George Dewey, United States Navy, from Mrs. Dewey.

A loan of exceptional interest, mainly associated with colonial times in Philadelphia, received from Mrs. Thomas Hamilton Wilson and Miss Abercrombie, of Washington, contains a bodice and the material of the skirt of a white satin dress embroidered in rose buds, which was worn by Mrs. Patterson, wife of Gen. Robert Patterson, as hostess at a ball given in Philadelphia in honor of Gen. Lafayette,

lace fichus, and an apron and capes of tambale embroidery, besides other articles of wearing apparel, a sample of early quilting, fans, etc. A large collection from Mrs. Julian James is especially noteworthy as representing the history of an American family during the period of a century past by a great variety of objects of costly materials and fine workmanship. There are dresses, bonnets, laces, gloves, and the various other classes of objects necessary to complete the attire of the well-dressed woman, ornaments for the hair, jewelry of many kinds, accessories for the street, toilet articles, and other household belongings. The Misses Long also contributed a large number of specimens which are especially important as showing the exquisite needlework and great taste of our ancestors in providing articles for their personal use. Their loan contains oriental crêpe material of a wedding dress imported about 1810, baby clothes, a cap, a handkerchief, fans, slippers, stockings, lace sleeves, fichus, household articles, a comb, sets of jewelry, a brooch, etc.

Exceptionally notable was a gift from Mrs. John Van Schaick, jr., of Washington, of 10 pieces of jewelry and 1 of ivory, which are both intrinsically and artistically of much value. They were the property of Julia Adelaide Tyson, wife of Benjamin F. Romaine, of New York, and mother of Mrs. Van Schaick, and comprise bracelets, earrings, and a brooch of Roman gold set with cameos and pearls, a brooch with miniature on porcelain of Holbein's Madonna, a pendant of mosaic, an enameled brooch, a Limoges pendant of Henry IV, a brooch set with a trilobite, and an ivory triptych of the fifteenth century.

Among other loans of miscellaneous articles were 7 shawls of Cashmere, crêpe and lace veils, fans, brooches and other jewelry, a Lowestoft tea caddy, badges, etc., from Mrs. E. L. McClelland, of Washington; a locket with a picture of "Peace," period of 1812, and a tortoise-shell back comb, from Mrs. Frank W. Clarke, of Washington; 3 bonnets of 1850 and a fur muff, from Mrs. Allan McLane, of Washington; silver mugs, knives, forks, and spoons, period of 1860, besides needlework and wearing apparel, from Miss Jennie M. Griswold; and 6 beautiful Spanish and French fans from Madame Carlos Maria de Pena, wife of the minister from Uruguay. Three fans, 2 cardcases, and a pair of jet bracelets contained in the bequest of Miss Lucy H. Baird were assigned to this collection. Besides the India shawls already referred to, 2 were received as a gift from Miss L. L. Lander, of Washington, and 1, of the period of 1820-1840, was presented by Commodore R. G. Davenport, United States Navy, retired, while 1 was lent by Mrs. John E. McElroy, of Albany, N. Y.

Work of the preparators.—In the general laboratory of the department, which remains under the immediate direction of the head

curator, the varied activities connected with the building, modeling, casting, painting, repairing, cleansing, and poisoning of exhibits were carried on as usual. Mr. H. W. Hendley, for several years in charge of this laboratory, resigned on July 19, 1913, and was succeeded by Mr. W. H. Egberts. Mr. R. A. Allen and Mr. T. W. Sweeny were engaged in the division of ethnology, while in the several other divisions the preparatorial work was attended to by the curators, with such assistance as was needed. The volume of work was greatly increased during the year, and much extra help required, on account of the preparation of extensive exhibits for the Panama-California Exposition and the Panama-Pacific Exposition, as well as of the exchange arrangement with Prof. C. V. Hartman, of the Naturhistoriska Riksmuseum, at Stockholm, Sweden. Mr. U. S. J. Dunbar modeled a large number of figures for the family and industrial groups; Mr. Hendley, subsequent to his separation from the Museum, modeled and painted, under contract, plaster figures for the historic costume exhibit; and Mr. Frank Mička made cases and painted numerous figures for the expositions.

Exhibition collections.—Steady progress was made with the exhibition collections, except in the division of graphic arts, where the renovation of the halls interrupted all operations. The more important and effective results were in connection with history, period costumes, photography, and musical instruments. Permanent assignment of space has now been arranged for most subjects, the exhibition material, so far as it can be supplied by the existing collections, has been in great measure selected, the cases are largely provided, and installation and labeling has been interrupted only by the preparation of exposition and exchange exhibits.

Explorations.—No member of the staff of the department found time to engage in field work, except that the head curator spent two days in visiting a very interesting aboriginal site near Luray, Va., on behalf of the Bureau of American Ethnology. Several joint expeditions of the Museum and the Panama-California Exposition, however, were conducted under the direction of the curator of the division of physical anthropology, as follows:

Prof. K. Stolyhwo, director of the Anthropological Institute of Warsaw, Russian Poland, examined certain caves which the curator had previously visited on the Yenisei River in Siberia, with the view of obtaining traces of neolithic and possibly older human remains. The exploration, which was greatly interrupted by adverse climatic conditions, extended over six weeks, and, while failing to furnish skeletal remains of much value, it resulted in the acquisition of important data and numerous very interesting archeological specimens. An investigation among the uncivilized tribes of southeastern Siberia, in charge of Dr. Stanislaw Poniatowski, chief of the Ethnological

Laboratory of Warsaw, was begun in the spring of 1914 and still remains unfinished. Its main object is to secure photographs and casts of the Siberian natives who bear so close a physical resemblance to the American Indian. An important expedition for the study of the development of the Negro child among the Zulu, Bushmen, and other native tribes in south and east Africa by Dr. V. Schück, one of the most promising of the younger generation of European anthropologists, was nearing completion at the close of the year. Besides the making of photographs and casts of these primitive peoples for the San Diego exposition, the principal purpose of this research is to obtain data on the growth of the Negro child in its native land to serve as the foundation for contemplated studies on the Negro as acclimatized in this country.

DEPARTMENT OF BIOLOGY.

The number of accessions and of specimens received by this department was somewhat greater than in the previous year, the most notable acquisition having consisted of some 200,000 insects obtained by entomologists of the Department of Agriculture during economic investigations in Texas and neighboring States. Mr. H. C. Raven, whom the exceeding generosity of Dr. William L. Abbott permitted to remain in eastern Borneo, sent from there over 1,500 mammals and birds. The Bureau of Fisheries transmitted extensive collections of fishes and marine invertebrates, a large number of reptiles and batrachians from various parts of North America, and the first series, with types, of the mammals obtained in Lower California during the cruise of the steamer *Albatross* in 1911. From the Biological Survey were received many mammals from Patagonia, and reptiles and batrachians, chiefly from Panama; and from Prof. A. M. Reese a considerable collection of marine invertebrates, besides a number of reptiles and batrachians, secured in the Philippine Islands. These were the principal accessions which had to be divided between two or more divisions, and they will again be referred to in their appropriate places.

Mammals.—Additional specimens of the rare *Tupaia mülleri* and *Reithrosciurus*, mentioned in the last report, were contained in the collection of Mr. Raven from Dutch East Borneo, and also a shrew of the genus *Crocidura* and a rare cat, *Felis badia*, both new to the Museum. The Lower California mammals obtained during the cruise of the Fisheries steamer *Albatross* in 1911, including Dr. C. H. Townsend's types of 10 new species, have already been spoken of, as have also the Patagonian mammals transferred by the Biological Survey. Mr. Arthur de C. Sowerby transmitted 121 specimens from Manchuria, among which is a new species described by Mr. Miller

as *Apodemus praetor*; and an important gap in the palearctic series was filled by the purchase of a specimen of the Chinese so-called "horse-tail" deer, *Elaphurus davidianus*, which will soon be mounted for exhibition. A notable gift from Dr. Enrico Festa consisted of a deer, *Cervus corsicanus*, and a wild boar, *Sus meridionalis*, from the island of Sardinia. The African collection was increased by a number of specimens obtained by Dr. V. Schück in northern Zululand, and by Mr. H. J. A. Turner in British East Africa, among the latter being types of several new forms. Mr. C. T. Summerson presented specimens from Alaska, including two skulls of Dall's sheep, and Mr. F. D. Ward donated a complete specimen of the dugong preserved in formalin.

The tanning of large and medium-sized skins was nearly completed and the taxidermist detailed to the division made up 325 skins for the reserve series, consisting mainly of small carnivores and monkeys from the Borneo collection of Mr. Raven. Unusual progress was made in the preparation of osteological material, some 920 large skulls, 93 more or less complete skeletons, and many hundreds of miscellaneous bones, chiefly leg bones, having been cleaned at the Museum, and 3,200 small skulls and 80 skeletons, by contract.

The mammals from the Smithsonian African Expedition were rearranged and most of those from South Africa were identified, the labeling of both being completed. Much work was done toward installing the skulls and skeletons of large mammals in 100 quarter-unit cases specially provided for the purpose in the west attic. With the exception of the cetaceans, the American deer, and the family Bovidae, the entire collection of large mammal skeletons is now supplied with proper case room. The whale skulls and skeletons are still temporarily quartered in the north gallery and northeast basement of the old Museum building, while a few skulls too large to be accommodated there have been placed provisionally with the osteological exhibit in the new building.

Research work in this division was largely restricted to the description of new forms discovered incidentally during the identification of collections recently received or in the course of revising and redetermining old material, as indicated by the titles of the papers cited in the bibliography at the end of this report. In addition, the curator of the division, Mr. Gerrit S. Miller, jr., prepared a new edition of the Directions for Preparing Specimens of Mammals, and the assistant curator, Mr. N. Hollister, completed a monograph of the grasshopper mice, *Onychomys*. Dr. C. Hart Merriam, associate in zoology, continued his studies of North American bears, the monograph on this subject, which has long engaged his attention, being now well advanced toward completion. Dr. E. A. Mearns, United States Army,

retired, also associate in zoology, studied the raccoons of the Mexican boundary survey, of which he was the chief zoologist; and Mr. Edmund Heller continued his work on the mammals of the Smithsonian African Expedition, of which he was one of the naturalists.

The members of the Biological Survey of the Department of Agriculture had at all times full access to the collections, which were also consulted by Dr. J. A. Allen, Dr. W. K. Gregory, and Mr. A. C. Andrews, of the American Museum of Natural History; Mr. W. H. Osgood, of the Field Museum of Natural History; Dr. O. P. Hay, of the Carnegie Institution of Washington; Dr. J. C. Merriam, of the University of California; Dr. D. G. Elliot, of New York; Dr. R. W. Shufeldt, of Washington; and Mr. Childs Frick, of Bryn Mawr, Pa. Specimens were lent for study to Dr. G. M. Allen, of the Museum of Comparative Zoölogy; Dr. J. A. Allen; Mr. H. B. Bailey, of Newport News, Va.; Prof. T. D. A. Cockerell, of the University of Colorado; Mr. Childs Frick; Prof. George S. Huntington, of the College of Physicians and Surgeons of New York; Dr. J. C. Merriam; and Mr. Witmer Stone, of the Academy of Natural Sciences of Philadelphia.

Birds.—The birds received from Mr. Raven in east Borneo comprised 701 skins, besides a few skeletons, eggs, and nests. A generous gift from Dr. Edgar A. Mearns, United States Army, retired, consisted of his private collection of 1,577 skins, 780 eggs, and 48 skeletons. In addition to a large number of foreign species, chiefly from England and Denmark, this donation contains a selected series from Dr. Mearns' early collecting, including many specimens from the Fort Verde region, Ariz., and examples of several exceedingly rare forms, as, for instance, two passenger pigeons, now extinct in the wild state, and two Carolina parakeets and one ivory-billed wood-pecker, both of which are nearing extinction. Another welcome accession, presented by Mr. Otto Holstein, was composed of 25 bird skins from Ecuador, among them being two skins of the spine-tail humming bird, *Leptasthenura andicola*, and a species of *Calospiza*, new to the Museum. To facilitate the researches of Dr. Mearns on the east African birds from the two expeditions of which he was a member, 15 skins of birds from Africa, including a species of *Myioceyx*, a genus not hitherto represented in the collection, were purchased.

The rearrangement of the reserve series of bird skins was continued more actively than during the previous year owing to increased facilities, with the result of advancing the revision to the extent of 20 quarter-unit and 53 half-unit cases. This brings the new installation, commencing with the passeres, down nearly to the end of the birds of prey. Case and drawer labels were prepared for these 73 cases and temporary labels for the remainder of the series,

the contents of which were much shifted during the year. The work of dismounting the large number of birds withdrawn from exhibition was continued by contract with very excellent results, and much labor was expended in properly relabeling about 700 birds thus returned to the reserve series. The search for type specimens was also continued, and several were discovered, notably the type of Girard's *Icterus auduboni*, which had long been considered lost.

The osteological series was systematically arranged in the cases provided for the purpose, the loose bones were numbered, and the material was partly cleaned. The drawers were temporarily labeled to show the orders and families contained in each, and the skeletons received from the preparators the previous year were catalogued and numbered, but not distributed. About 200 birds' eggs were placed in their cases, but most of the accessions of eggs were left for attention at a future time.

Part 6 of the great work on the Birds of North and Middle America, by Mr. Robert Ridgway, the curator of the division, was published on April 8, 1914. In spite of continued ill health, Mr. Ridgway has also made material progress in the preparation of manuscript for the parts to follow. Several of the orders and higher groups to be included in part 7 have been elaborated, and the synonymy and references for various groups^o not only in this, but in subsequent parts as well, have been worked up. On account of the pressure of routine duties Dr. C. W. Richmond, the assistant curator, could give but little time to research work. He saw part 6 of Bulletin 50 through the press, supplying and verifying references and helping to prepare the index. In these tasks he was assisted by the aid of the division, Mr. J. H. Riley, who was also of much help to Mr. Ridgway in compiling references and measuring specimens. Dr. E. A. Mearns continued his studies of east African birds, with particular reference to the ornithological results of the Smithsonian and Frick expeditions, and he was given special assistance during several months for measuring and cataloguing specimens. Thirty-six new forms were described by him in publications issued during the year. Mr. A. C. Bent, of Taunton, Mass., also made progress with his work on the life histories of North American birds.

The facilities offered by the division were constantly utilized by the staff of the Biological Survey. Mr. Alex Wetmore examined the skeletons of passerine birds and incidentally aided very materially in rearranging and putting this part of the collection in order. Mr. H. C. Oberholser completed a monograph on the goat-suckers of the genus *Chordeiles* and a review of the forms of *Entomothera*, a genus of kingfishers, basing his observations chiefly on Museum material. He also continued his investigations of East Indian birds, largely contributed by Dr. W. L. Abbott. In addi-

tion to the committee on classification and nomenclature of the American Ornithologists' Union, which spent three days in the division, many members of the union availed themselves of the opportunity to study various specimens during the annual meeting which was held at the Museum in April, 1914.

Among ornithologists who conducted more or less extended researches in the laboratory were Mr. W. deW. Miller and Mr. J. T. Nichols, of the American Museum of Natural History; Mr. R. C. Murphy, of the Brooklyn Institute of Arts and Sciences; Mr. W. H. Osgood, of the Field Museum of Natural History; Mr. W. E. Clyde Todd, of the Carnegie Museum; Dr. Thomas Barbour, of the Museum of Comparative Zoölogy; Mr. H. K. Coale, of Highland Park, Ill.; Dr. Jonathan Dwight, jr., and Mr. C. H. Rogers, of New York; Mr. J. H. Fleming, of Toronto, Canada; Mr. Harry Highbee and Mr. F. H. Kennard, of Boston, Mass.; Dr. L. C. Sanford, of New Haven, Conn.; Mr. George Shiras, 3d, and Lord Percy of the British Embassy, Washington; and Mr. Otto Widmann, of St. Louis, Mo. The collection of birds' eggs was consulted by Mr. H. H. Bailey, of Newport News, Va.; Mr. R. M. Barnes, of Lacon, Ill.; Mr. George H. Lings, of Nyack, N. Y.; Mr. J. Parker Norris, jr., of Philadelphia, Pa.; Mr. Roswell S. Wheeler, of Oakland, Cal.; and Mr. John Williams, of Iowa City, Iowa. Access to the collection of skeletons was granted to Mr. Loye Holmes Miller, of Los Angeles, Cal., and Dr. R. W. Shufeldt, of Washington.

A large number of specimens were lent for study to institutions and individuals as follows: Mr. F. M. Chapman, of the American Museum of Natural History; Mr. W. E. Clyde Todd; Mr. R. C. Murphy; Dr. Thomas Barbour, and Mr. Outram Bangs, of the Museum of Comparative Zoölogy; Mr. H. S. Swarth, of the Museum of History, Science, and Art, Los Angeles, Cal.; Mr. Joseph Grinnell, of the Museum of Vertebrate Zoology of the University of California; the Colorado Museum of Natural History, Denver, Colo.; Mr. H. K. Coale; Mr. Louis Agassiz Fuertes, of Ithaca, N. Y.; Mr. H. H. Kopman, of the Conservation Commission, New Orleans, La.; Dr. W. L. Slater, of the British Museum of Natural History; Dr. Josef Gengler, of Erlangen, Germany; and Mr. Frank Bond, of Washington.

Reptiles and batrachians.—Mention has already been made of material received from the Bureau of Fisheries, the Biological Survey, and Prof. A. M. Reese. To Dr. J. C. Thompson, United States Navy, the division is indebted for a large number of specimens collected by himself on the west coast of Mexico and in California, including all of those on which was based his intensive study of the variation of a species of gartersnake on the peninsula of Sausalito, published by the Museum during the year. Several rare species were obtained by

Mr. G. S. Miller, jr., in Mississippi and Alabama, and to augment the turtle collection, which has been at a standstill for many years, but which the head curator has now taken up for a critical examination of the North and Middle American forms, a number of southern species were purchased. The genus *Brachylophus*, the only one of the American family Iguanidae known to occur in the Old World, has not hitherto been represented in the collection. During last year, however, two specimens were received as a gift from the Department of Agriculture of Fiji, and another was obtained in exchange from the Museum of Comparative Zoölogy, together with two specimens of the singular west African "hairy" frog, *Astylosternus robustus*.

The substitution of glass-stoppered jars for the old style of salt-mouth bottles is still in progress, and the contents of several old tanks were also transferred to jars or made into dry preparations, notably the large turtles. The osteological material has been partly gone over and arranged in unit cases placed in the corridor adjacent to the laboratory. In furtherance of a study of the turtles of North and Middle America, begun by the head curator, it was found necessary to institute a separate series of cleaned turtle skulls, similar to the one in the division of mammals, and a number were prepared in that manner. This work will be pushed during the current year and promises results of great interest. The card cataloguing of the collection is progressing satisfactorily and the search for old types has been quite successful.

Since 1857, when Louis Agassiz published his Contributions to the Natural History of the United States, no scientific revision of the North American turtles has appeared in this country. More than 25 years ago the Museum arranged with Dr. G. Baur for the preparation of a volume on the Testudinata of North America, but the work was stopped by reason of his death, and the fragmentary state of the material left by him prevented its being finished by others. The urgent demand for such a publication has induced the head curator to undertake the task, the subject being treated somewhat on the plan of, and covering the same territory as, Ridgway's Birds of North and Middle America. The work was started about a year ago, and during the hours that could be spared from administrative duties he has made such progress that the volume may be expected to be ready in a year or two. The collections of the division were consulted by Dr. Thomas Barbour, of the Museum of Comparative Zoölogy; and Miss Stella Clemence, of the American Museum of Natural History; and specimens were lent for study to Dr. Alexander G. Ruthven, director of the Museum of Zoology of the University of Michigan; Dr. Shufeldt, of Washington; and Dr. Barbour.

Fishes.—The most important accessions came, as usual, from the Bureau of Fisheries. They represented the results of collecting work

and of expeditions to various localities, and included the types of many new species. The museum of Leland Stanford Junior University contributed a large number of desirable specimens, obtained in Japan and California by Dr. David S. Jordan, Prof. J. O. Snyder, and others; and Mr. Robert Tweedlie, of Balboa, Canal Zone, presented an especially fine collection, including the young of rare forms, from the Pacific side of the Isthmus of Panama. Many well preserved and interesting fishes were collected for the Museum at the Philippine Islands and in the inner lagoon of Fanning Island by Dr. Fred Baker, of Point Loma, Cal.; and at the Philippine Islands, by Dr. Albert M. Reese, of the University of West Virginia.

The general revision of the collections of this division, the need of which was alluded to in the last report, was begun during the year. As indicated in that connection, recent accessions had left the division with an accumulation of material the proper arrangement and disposition of which taxed to the utmost the energies of its small staff. The great danger to be apprehended in reducing the bulk of the collection, which could only be done by relieving it of all duplicates and condemning such material as was not suitable for further preservation, was that valuable specimens, even types, might be discarded unless the greatest care was exercised and the work undertaken by some one having a broad and thorough knowledge of the group. No other course was open than to obtain for this revision the services of an acknowledged expert in ichthyology who could give his entire time and energy to the task, unhampered by any routine duties. It was fortunately found possible to secure for this important work the cooperation of Prof. J. O. Snyder, of Leland Stanford Junior University, who arrived in Washington in the first part of January, 1914, and has labored unceasingly to place the collection in order. The specific direction of his work has been to determine whether any species was more abundantly represented in the collection than necessary, to cull out such specimens as were too poorly preserved to be of further use, and to separate such types and other especially valuable specimens as might be recognized. Beginning with the larger class of containers, he had by the close of the year examined the contents of more than 400 large storage jars, of which a considerable number of poorly preserved specimens were condemned, though some were saved for their skeletons, and many specimens were set aside as duplicates. Fifty or more types were segregated, and rare or otherwise exceptionally valuable specimens were placed in separate bottles. The revision of material belonging to 15 unassorted collections, the most of which had not yet been studied, was also completed. It was often found necessary to identify collections or to determine whether published investigations were based on particular specimens, which would make their

retention desirable. As soon as the large containers have been disposed of—and this has been nearly done—the examination of the smaller jars will be taken up. The work is expected to occupy several months of the current year, and is one of the most important of its kind that has been undertaken by the Museum.

Incidental to the reexamination of specimens and the search for types a considerable amount of research into the old literature on the subject of the collections was carried on by Prof. Snyder and Mr. B. A. Bean, the assistant curator. Mr. S. F. Hildebrand, of the Bureau of Fisheries, had the use of the Panama material in connection with the preparation of his report on the fishes of the Isthmus, and other members of the same bureau, especially Dr. William C. Kendall and Mr. L. Radcliffe, consulted the collections. Specimens were lent for study to Dr. Carl H. Eigenmann, of the Indiana State University; Dr. Louis Hussakof and Mr. J. T. Nichols, of the American Museum of Natural History; Mr. C. W. Shepherd, of Kensington, London; Dr. H. M. Smith, United States Commissioner of Fisheries; Prof. C. H. Gilbert and Prof. J. O. Snyder, of Leland Stanford Junior University; and Dr. S. E. Meek, of the Field Museum of Natural History.

Insects.—The deposits of insects by the Bureau of Entomology were exceptionally extensive and notable. The largest and most important was a collection made by the force of the bureau engaged in the investigation of southern field crops, and came chiefly from Texas. When received at the Museum it was contained in about 400 Schmitt boxes for the dried or pinned material and 1,000 large vials for the alcoholic material, the total number of specimens being estimated at approximately 200,000, about equally divided between the dried and alcoholic preparations. This is probably the best State collection ever brought together, although its full Museum value can scarcely be passed upon until more of the material has been determined and the results incorporated in the records. Other noteworthy accessions from the bureau consisted of some 5,500 specimens collected by its employees and others in various localities from the Bahama Islands and Florida to New Mexico, Arizona, California, and Alaska; and of the material used by Mr. P. H. Timberlake for his revision of the genus *Aphytus*. The latter comprised about 40 specimens of European weevils bred from alfalfa and 79 named reared specimens of the genus, including the types of three new species.

Of gifts from individuals may be noted 124 vials of parasitic Hymenoptera from Mr. J. P. Kryger; 240 chalcids from Prof. C. F. Baker; and several accessions from Mr. Frederick Knab, aggregating 1,457 specimens, mostly of Diptera, from the District of Columbia.

The transfer of specimens to the permanent trays made little progress, owing to a delay in the delivery of the trays ordered for the year's use, but much is expected to be accomplished in this direction during the current year. Preliminary to the preparation of a faunal collection to be added to the exhibition series for the District of Columbia, special efforts have been made to assemble as much local material as possible suitable for the purpose, and it is expected that a good representation of several orders will soon be ready for installation.

The associate curator of the division, Mr. J. C. Crawford, continued his studies of the Hymenoptera, and, in addition to several papers published, he completed a contribution on the bees of the genus *Coelioxys* in America north of Mexico. Of the material secured during the biological survey of the Panama Canal Zone a part was worked up during the year, and accounts of the Lepidoptera, by Dr. Harrison G. Dyar and Mr. August Busck, were issued. Mr. J. R. Malloch finished several papers on the Agromyzidae and Simuliidae, the titles of which and of other communications by custodians of the division will be found in the bibliography at the end of this report. Mr. William Schaus continued his work on the Lepidoptera assembled by himself and designated as the Schaus collection, and published one paper descriptive of several new genera and 136 new species of Noctuidae, all but three of which were secured by himself and Mr. J. Barnes in Guiana. For nearly five months Dr. E. Martini, of Hamburg, Germany, made studies on the collection of mosquitoes, and for two months Mr. S. B. Fracker, of the University of Illinois, was at work on lepidopterous larvae. Other entomologists who made investigations at the Museum were Mr. William T. Davis, of New Brighton, N. Y.; Prof. A. L. Melander, of Pullman, Wash.; Mr. C. P. Alexander and Mr. Harold Morrison, of Cornell University; and Mr. L. H. Weld, of Evanston, Ill. Material was lent for study as follows: Neuroptera to Mr. L. Berland, of the Muséum d'Histoire Naturelle, Paris, France; Orthoptera to Mr. Morgan Hebard, of the Academy of Natural Sciences of Philadelphia; Hymenoptera to Dr. W. M. Wheeler, of Harvard University, Mr. P. H. Timberlake, of Salt Lake City, Utah, Mr. Harold Morrison and Mr. William Beutenmüller, of New York; Coleoptera to Mr. A. B. Wolcott, of the Field Museum of Natural History, Mr. R. D. Glasgow, of Urbana, Ill., and Mr. H. E. Burke, of Placerville, Cal.; Diptera to Mr. A. L. Melander, Prof. James S. Hine, of the Ohio State University, Dr. E. P. Felt, of Albany, N. Y., Prof. J. M. Aldrich, of Lafayette, Ind., Mr. R. R. Parker, of the Massachusetts Agricultural College, Mr. C. P. Alexander and Mr. Charles Schaeffer, of the Brooklyn Institute of Arts and Sciences; Hemiptera to Dr. E. Bergroth, of Turtola, Finland; and Arachnida to Prof. C. W. Peckham, of Milwaukee, Wis.

Mollusks.—The accession of greatest moment was the gift by Mr. Thomas H. Bryant, of Cincinnati, of the collection of the late Prof. F. W. Bryant, of Lakeside, Cal., consisting of five cases of miscellaneous shells of which a large number were desirable for the reserve series. A contribution of about 2,000 specimens was received as the results of a dredging expedition by Mr. John B. Henderson, to Chincoteague, Va., in which the assistant curator, Dr. Paul Bartsch, also took part. Several of the species obtained are apparently new. A miscellaneous lot of marine shells, mostly from the Gulf of California, presented by Mrs. Julian James, consists of material obtained by her brother, the late Lieut. Commander T. B. M. Mason, United States Navy. A collection of minute marine shells of considerable interest from the island of Mujeres, off the coast of Yucatan, was donated by Mr. Russell H. Millward; and a fine series of nearly 1,000 specimens of *Bulimulus* from 43 localities in Texas, was presented by the Hon. J. D. Mitchell, of Victoria, Tex., an old friend and correspondent of the Museum. Mr. Charles R. Orcutt added to the collections previously sent by him from various places in Mexico about 500 specimens of very acceptable mollusks; Mrs. T. S. Oldroyd furnished some excellent Californian marine specimens from the vicinity of San Pedro; and Mr. James Zetek presented interesting specimens from Panama.

The reserve collection has been kept in good condition and is readily accessible for study and reference. The western American marine material has been partly gone over, recent acquisitions have been incorporated in their proper places and the nomenclature has been so far revised as to present the latest data for about one-fifth of the entire series from the Pacific coast. A very large amount of fine dredgings, bottom samples, etc., has been searched for minute shells, and the pickings have been submitted to rough sorting and labeled with the locality and other data preparatory to further study and identification. Part of this material came from Philippine dredgings by the Fisheries steamer *Albatross* and part from the Gulf of California. The series of mollusks for the faunal exhibit of the District of Columbia was completed, and the assistant curator also gave much time to the preparation and arrangement of marine invertebrates for the general exhibition.

The special investigations of the curator, Dr. William H. Dall, were directed to the fauna of the northwest coast of America preliminary to a manual of this fauna which he is preparing, but on which progress has been slow, owing to the pressure of routine work. A small collection of shells made on both coasts of Canada was studied and a report made to the Dominion Geological and Natural History Survey, which has been printed in the Bulletin of the Victoria Memorial Museum at Ottawa. Dr. Paul Bartsch, the assistant

curator, has given much attention to the Philippine land shells, for which a large number of illustrations have been prepared by photography. He has completed, with the illustrations, the report on the marine shells of South Africa, chiefly contributed by Lieut. Col. W. H. Turton, retired, of the British Army, except certain bibliographic additions which it is desirable to include. The collections have been extensively used by Mr. John B. Henderson, of Washington, who is continuing his studies of east American and Antillean mollusks. Miss Julia Gardner, of Johns Hopkins University, and members of the Geological Survey have also utilized the collections in connection with their studies of fossil shells.

Marine invertebrates.—The principal accessions from the Bureau of Fisheries were as follows: One hundred and sixty-two lots of ascidians, including the types of 8 new species, obtained on the Philippine expedition of the steamer *Albatross*, 1907–1910, and worked up by Dr. W. G. Van Name; large collections of plankton taken by the schooner *Grampus* on the New England coast during the summers of 1912 and 1913, including schizopods identified by Dr. H. J. Hansen, salpæ identified by Mr. W. F. Clapp, and Medusæ, amphipods, etc., identified by Dr. H. B. Bigelow; 36 lots of Foraminifera (Xenophyophora) dredged in the eastern Pacific Ocean in 1904–1905 by the steamer *Albatross* under the direction of Alexander Agassiz and reported on by Prof. F. E. Schulze; a collection of leeches made during the investigation of the Great Lakes in 1899, and studied by Dr. J. Percy Moore; and many samples of plankton and specimens of invertebrates collected in Lake Maxinkuckee, Ind., during several years, under the supervision of Dr. B. W. Evermann.

Mr. H. K. Harring, custodian of the rotatoria, contributed 103 microscopic slides representing almost as many species of rotifers, from the District of Columbia and vicinity; and Dr. Albert M. Reese, of the University of West Virginia, obtained a large number of invertebrates for the Museum during his trip to the Philippine Islands. Forty species of invertebrates were received in exchange from the University of the Philippines at Manila, and 16 species of ascidians, identified by Dr. R. Hartmeyer, were secured in the same manner from the Royal Zoological Museum in Berlin, Germany. The Department of Agriculture and Technical Instruction (Fisheries Branch), Dublin, Ireland, presented 16 species of deep-water echinoderms from off the Irish coast.

The routine work connected with the care, sorting, labeling, and cataloguing of the extensive and varied material received was promptly attended to and much time was spent in the preparation and shipment of specimens for study elsewhere and for distribution to educational establishments. The alcoholic and dried collections of sponges and ophiurans, and the dried collections of asteroids,

echinoids, alcyonarians, and hydroids were overhauled, the nomenclature revised, fresh labels put on the outside of jars and boxes, and a systematic arrangement made. At the same time the card catalogue of these groups was brought up to date. Miss Rathbun also cooperated with Dr. Bartsch in the preparation and arrangement of the marine faunal exhibits, in which good progress was made.

The helminthological collection, which had been retained in the Smithsonian building, was moved in the spring to the new building, where the alcoholic specimens have been arranged in two cases in the stack room and the microscopic slides in the adjacent corridor. Better accommodations for the latter and laboratory facilities for this section are intended to be provided. The collection of onychophores was transferred to this division from the division of insects. It now contains representatives of four genera and seven species, including the type of a new subspecies. The four microscopic slide cases in the division have been almost entirely filled with Foraminifera mainly of the mountings of North Pacific specimens by Dr. Joseph A. Cushman, who has been making rapid progress in this work. The other microscopic slides are now provisionally arranged in a large unit case, awaiting better accommodations for their storage.

Miss Mary J. Rathbun, assistant curator, completed a report on the decapod and stomatopod crustaceans collected at the Monte Bello Islands, off the northwest coast of Australia, by Mr. P. D. Montague, of Cambridge, England, which is being published in the Proceedings of the Zoological Society of London. She also worked up the crabs of the families Gonoplacidae and Gecarcinidae from the expedition of the Fisheries steamer *Albatross* to the Philippine Islands in 1907-1910, and in a preliminary paper, printed in the Proceedings of the Museum, the new species of the former family were described. All of the unidentified specimens of these families in the possession of the Museum were likewise named at the same time, and the family Inachidae is now receiving attention.

Mr. Austin H. Clark, assistant curator, prepared a number of papers of greater or less size, as follows: A monograph of the crinoids of the Antarctic regions, to be included in the reports of the German South-Polar Expedition; a monograph of the crinoids of China and Japan, based on the collections of Prof. Dr. Franz Doflein, of Freiburg, which will probably be published by the Bavarian Academy of Sciences; a report on the crinoids collected by the Australian marine surveying ship *Endeavour* off southwestern Australia, to be published by the Western Australian Museum at Perth; and a detailed account of the crinoids of the British Museum. Mr. Clark was also the author of several shorter papers describing small crinoid collections or revising restricted crinoid

groups, and of others in which the facts obtained from a study of the recent crinoids are applied toward the solution of problems especially in paleontology and oceanography. He likewise devoted some time to the study of the onychophores and their geographical distribution.

Dr. Harriet Richardson Searle, collaborator, reported on the isopod crustaceans obtained by the Fisheries steamer *Albatross* under the direction of Alexander Agassiz, during the Pacific Ocean cruises of 1899-1900 and 1904-1905. Mr. Clarence R. Shoemaker, aid, prepared an annotated list of the amphipod crustaceans collected in south Georgia by Mr. R. C. Murphy, and has begun work on the amphipods of the east coast of the United States. Miss Lilian C. Cash, cataloguer, gave some attention to the alcyonarians, preparing a series of 175 microscopic mounts of spicules, and beginning the identification of the species in certain groups. Mr. H. K. Harring, of the Bureau of Standards, devoted his spare time to the study of rotifers, including the mounting of a large number of slides for the Museum, and completed a report on the material obtained in the Panama Canal Zone by Dr. C. Dwight Marsh.

Much research work was done for the division during the year by distinguished naturalists, both at home and abroad, who are recognized as collaborators in the classification of the collections. Some of the more important results were as follows: Dr. H. J. Hansen, of Copenhagen, Denmark, completed his monograph of the Euphausiacea; and Dr. Joseph A. Cushman, of the Boston Society of Natural History, the fourth part of his monograph of the North Pacific Foraminifera, including the Chilostomellidae, Globigerinidae and Nummulitidae, the fifth part, embracing the Rotalidae, being also nearly ready. Dr. H. A. Pilsbry, of the Academy of Natural Sciences of Philadelphia, has nearly finished his studies on the sessile Cirripedia; Dr. Charles B. Wilson, of the State Normal School, Westfield, Mass., submitted another of his monographs on the parasitic copepods, dealing with the family Lernaeopodidae; and Prof. C. C. Nutting, of the State University of Iowa, completed the third part of his monograph on hydroids. Prof. A. E. Verrill, of Yale University, in his report on the starfishes of the Harriman Alaska Expedition, recently published by the Smithsonian Institution, described a small collection lent him by the Museum; Prof. Frank Smith, of the University of Illinois, continued his study of earthworms, especially those from America and British East Africa; Dr. R. Koehler, of Lyon, France, has undertaken to report upon the large collection of Philippine ophiurans obtained chiefly by the steamer *Albatross* in 1907-1910; and Dr. N. A. Cobb, of the Department of Agriculture, has taken up the study of a small collection of non-parasitic nematodes.

The following have continued work on collections in their custody as opportunity permitted: Dr. R. C. Osburn, of Barnard College, on the bryozoans of the northeast coast of North America; Dr. W. M. Tattersall, of the Manchester Museum, England, on the Mysidacea; Mr. R. Southern, of Dublin, Ireland, on the annelids of the family Cirratulidae; Dr. J. W. Spengel, of Giessen, Germany, on *Sipunculus*; Prof. Maynard M. Metcalf, of Oberlin College, on Salpa and Pyrosoma; and Dr. Walter Faxon, of the Museum of Comparative Zoölogy, on crayfishes. Specimens have been lent for study to Prof. H. Garman, of the State University of Kentucky; Miss Ada L. Weckel, of Oak Park, Ill.; Mr. Stanley Kemp, of the Indian Museum, Calcutta; and Mr. F. C. Craighead, of Washington.

Plants.—Among the accessions of the year were several of exceptional value, the more noteworthy being as follows: Over 10,000 specimens were received from the Bureau of Plant Industry and the Biological Survey, of the Department of Agriculture, comprising, besides 1,500 miscellaneous plants, more than 1,200 mounted grasses, collected by Prof. A. S. Hitchcock during an investigation of this group in Nevada, California, Utah, and Arizona, and also 6,000 duplicate grasses, consisting of 30 sets of 200 specimens each of certain species which have been critically studied by Prof. Hitchcock and Mrs. Agnes Chase in recent years, and of which it has been considered desirable to distribute authentic specimens. The New York Botanical Garden furnished 3,555 plants in exchange, of which 562 were African specimens from the Otto Kuntze Herbarium, and the remainder entirely from the West Indies, supplementing very acceptably the large series acquired from the same source in recent years, and resulting from investigations by that institution. Some 1,580 Chinese plants, representing a second installment of one of the largest sets of the exceedingly valuable collections made by Mr. E. H. Wilson, were purchased of Prof. C. S. Sargent.

A notable collection of cryptogams, numbering about 10,000 specimens, largely obtained by the late Mr. John B. Leiberg while engaged in field work in the western United States, was received as a gift from Mrs. Leiberg, of Leaburg, Oreg. It contains many duplicates which will be available for distribution as soon as the species have been fully identified. An important addition from a region not well represented in the herbarium consisted of 1,100 plants from Venezuela, of which 300, chiefly from the high mountains of that country, were purchased of Mr. Alfredo Jahn, Caracas, while the remainder, presented by Mr. H. Pittier, were secured by him in the course of an investigation of the agricultural resources of Venezuela. From the Bureau of Science at Manila 1,746 specimens were obtained in exchange, nearly 1,000 of these having come from Guam, and being duplicates of material which had served as the basis of an extensive report on the flora

of that island by Mr. E. D. Merrill. Other collections worthy of mention were 2,000 specimens from the arid regions of Colorado, New Mexico, and Texas, contributed by the Carnegie Institution of Washington; 740 specimens from the mountains of North Carolina, obtained by Mr. Paul C. Standley and Mr. H. C. Bollman; 1,075 plants of the Henry Eggert Herbarium, largely from the south-central United States, received in exchange from the Missouri Botanical Garden; and 940 specimens, chiefly from Idaho, from the University of Wyoming.

Approximately 33,000 specimens were mounted for the general herbarium, which is much above the yearly average, and at the close of the year few remained to be prepared in this way. In other respects also the work of the division was well advanced and the collections were reported in excellent condition. By the employment of two extra assistants, an accumulation of about 50,000 mounted specimens of phanerogams was appropriately distributed in the cases and nearly one-half of the phanerogamic collection was rearranged, a considerable proportion of the specimens being likewise put in new covers. This revision will go on until it has been completed for the entire group.

As opportunity permitted, Mr. Standley continued the segregation of types and duplicate types from the study series. This work, which may be said to have progressed steadily for more than a year, has led to the assembling of upward of 7,000 specimens. Each type, after being plainly indicated as such, is placed in an individual cover of heavy manila tag board, with a distinctive label on which is written not only the generic and specific name but also the serial number of the genus according to the classification of Dalla Torre and Harms. The type specimens thus far removed from the general herbarium sequence have been associated in eight standard cases, placed conveniently near the offices of the assistant curators, so as to be easily cared for and still be available for consultation by investigators. The probational appointment of Mr. Glen P. Van Eseltine as aid has made it possible to carry out a plan long held in abeyance to place the cryptogamic collections in better order. During the past five or six years a large amount of material has accumulated in nearly all groups of the lower cryptogams, and although a part of this is in shape for immediate incorporation in the reserve series the greater part remains to be attended to, and the proper pocketing, labeling, and distribution involves much time and labor. The herbarium has been thoroughly poisoned by carbon bisulphide twice during the year. Only a few insects have been observed, and in no instance has any special damage been caused by them.

Mr. Frederick V. Coville, the curator of the division, continued his studies of the genus *Vaccinium*. Mr. William R. Maxon, associate curator, made considerable progress with his "Studies of tropical American ferns," and, in addition to two shorter articles, published a fifth paper under the above title. Copy for No. 6 of this series is now ready for the press. Mr. Paul C. Standley, assistant curator, continued his researches on Panama plants, especially of the family Rubiaceae, and began the preparation of a manuscript treating of the families Chenopodiaceae and Amaranthaceae of the North American flora. He plans also to publish a series of papers embodying the miscellaneous results of his work under the title, "Studies of tropical American phanerogams," of which part 1 appeared during the year. "The flora of New Mexico," prepared jointly with Mr. E. O. Wooton, of the Department of Agriculture, has been submitted for publication in its revised form and will constitute volume 19 of the Contributions from the National Herbarium. Mr. E. S. Steele devoted to the study of the genus *Laciniaria* such time as was not required for his editorial duties.

Dr. J. N. Rose, associate in botany, proceeded with his researches on the family Cactaceae under the auspices of the Carnegie Institution of Washington, his furlough from the National Museum having been extended for that purpose. Dr. E. L. Greene, associate in botany, has been engaged on part 2 of "Botanical Landmarks," and, in addition, was the author of two short papers on various species of American plants. Capt. John Donnell Smith, associate in botany, continued his investigations of previous years on the flora of Central America and published several papers describing new species from that region.

Among the botanists who worked in the herbarium for longer or shorter periods were Dr. C. H. Ostenfeld, of the Botanical Museum in Copenhagen, Denmark; Dr. N. L. Britton, director of the New York Botanical Garden, and Dr. P. A. Rydberg and Dr. J. K. Small, of the same institution; Prof. H. M. Hall and Mrs. Katherine Brandegee, of the University of California; Prof. Aven Nelson, of the University of Wyoming; Prof. Ezra Brainerd, of Middlebury College; and Prof. William Trelease, of the University of Illinois. The herbarium was also, as usual, constantly made use of by the botanists of the Department of Agriculture.

The number of specimens lent to institutions and individuals for study was above the average. Much of the material thus sent out was undetermined, and the Museum therefore became the chief, if not the only, beneficiary in many of the transactions. The principal shipments were as follows: A large number of plants of many groups to the New York Botanical Garden; numerous specimens from Central America to Capt. John Donnell Smith, of Baltimore, Md.; fungi

from New Mexico to Prof. J. C. Arthur, of Purdue University; lichens of the genus *Ramalina* to Dr. R. H. Howe, of Concord, Mass.; tropical American plants to the Royal Botanical Garden and Museum, Berlin, Germany; specimens of Solanaceae to Dr. Georg Bitter, Bremen, Germany; a large series of *Dryopteris* for study by Mr. Carl Christensen in connection with his extended monograph of the tropical American species of the genus, to the Botanical Museum of the University, Copenhagen, Denmark; lichens, mainly from Australia and New Zealand, to Mr. G. K. Merrill, Rockland, Me.; specimens of Chamaesyce, for study by Dr. C. F. Millspaugh, to the Field Museum of Natural History; and specimens of *Xanthium*, for study by Dr. T. J. Widder, and of tropical American Gesneriaceæ, mainly from Panama, for study by Dr. K. Fritzsch, to the Institute for Systematic Botany, Graz, Austria.

Work of preparators.—Having previously completed, so far as the material permitted, the principal new and prominent features for the exhibition series, especially of mammals and birds, the preparators were mainly occupied during last year in mounting smaller specimens and in renewing and improving the specimens from the older collections, which had to a large extent been installed in the new building without waiting for the renovation which their condition demanded. The collection still contains much material which should be replaced when better specimens can be obtained, and until this is done the exhibition as a whole must be regarded as below the proper standard. The work which this involves, although not as spectacular as the building of large groups, is as important from the museum standpoint and as necessary for the lessons designed to be illustrated.

Mr. George B. Turner, chief taxidermist, and his assistant, Mr. William L. Brown, finished the mounting of the reticulated giraffe, which is an especially effective piece of taxidermy, and also of the giant eland and the greater koodoo, both from East Africa, as well as of a specimen of the fallow deer, a common European species not hitherto represented in the exhibition halls. A fine specimen of the rare Père David deer, *Elaphurus davidianus*, from China, was also in course of preparation at the end of the year.

Mr. N. R. Wood, the bird taxidermist, mounted for exhibition 74 skins, mostly of African birds, including the 5 chicks of the ostrich group and 11 fresh skins. He also remounted 30 specimens and renovated or changed to other pedestals 22 specimens. Mr. George Marshall was mainly engaged in mounting small mammals, in which the exhibition series is exceedingly deficient except in the North American section.

The work done in the osteological laboratory under Mr. J. W. Scollick consisted in cleaning 938 mammal skulls, besides skeletons

and separate bones of mammals, birds, and reptiles to the number of 577. Mr. C. E. Mirguet renovated the okapi skeleton for exhibition and was employed in much other preparatorial work, including the making of a cast of a gorilla skull for the division of physical anthropology. Mr. William Palmer was mainly occupied with the arrangement of the faunal exhibit of the District of Columbia, the exhibition series of insects, and the synoptic series, though he was called upon for much special work in other directions.

Exhibition collections.—Two additional alcoves assigned to topical exhibits were opened to the public. They are devoted to the "architecture" of mammals and birds, and the eggs of birds. Most conspicuous is a large central floor case in which is displayed the enormous nest of the wood rat with its inhabitants, while models and illustrations of the burrows of other mammals and of birds are shown in cases against the wall. The birds' eggs are mainly arranged in three table-top cases.

No mammal groups were constructed, but several specimens mounted separately were added to the series. Foremost among these was the reticulated giraffe, a fine example, which, being placed alongside the common form, gives excellent opportunity for observing the differences between the two. Other large species installed were the giant eland and the greater koodoo from Africa and the fallow deer from Europe. Many small mammals other than North American were also introduced in various faunas, which have hitherto been very deficient in this respect. The enlarged models of bats' heads, referred to in the last report, were finally completed and placed on exhibition.

The only large group added during the year represents a family of African ostriches near its nest. It occupies a case of the same size as that of the lion group, is placed near the outer end of the main hall between the African mammals and the bird series, and consists of a pair of adult birds in fine plumage with five chicks. Remnants of the eggs from which the chicks have just emerged and a couple of unhatched eggs are lying on the ground in and near the nest. This forms a very attractive exhibit, is much the finest bird group in the Museum, and is on a par with the best of the mammal groups. It was designed and built by Mr. James L. Clark, of New York, who also mounted the old birds, the young ones being prepared by Mr. Nelson R. Wood of the Museum staff. The material was from the Smithsonian African Expedition. Another bird group placed on exhibition in the African fauna represents the hoatzin. It was constructed for and displayed at the St. Louis exposition of 1904, but remained in storage until recently when it was taken out, completely rebuilt, and greatly improved by Mr. William Palmer. The exhibit is highly interesting in showing the nestling hoatzins climbing

among the branches of the trees by means of the clawed digits of their wings. The transfer to new cases of the other bird groups mentioned in previous reports was completed. Of individual birds a considerable number, mostly African, were prepared and installed. The case containing the tropical humming birds was entirely rearranged, and neat brass holders were introduced for supporting the specimens, thereby greatly improving the appearance of the series.

There were several important additions of reptiles and fishes. One was an American crocodile, 13 feet long, from the older collection, but entirely made over and placed in excellent condition by Mr. C. E. Mirquet. The series of casts of fishes was somewhat increased, but the most novel and attractive exhibit introduced consisted of tropical fishes painted in their natural colors and displayed in alcohol in flat-faced jars. It occupies two cases and, while the method of preparation is still to some extent experimental, it is believed to be fairly permanent. Two further sections of the exhibition of marine invertebrates, one representing the littoral fauna from Cape Cod to Cape Hatteras, the other the characteristic forms of the Floridian fauna, beginning with Cape Hatteras, were opened to the public; and many specimens for other faunas, especially of crustaceans, were selected, colored, and mounted.

The series of reptilian and batrachian skeletons was somewhat increased and the latter were entirely rearranged. The synoptic series was also partly revised, and the insect collection was transferred to new cases. Many additions were made to the faunal exhibition of the District of Columbia, including a complete series of all the land and fresh-water shells of the District, which are installed in a sloping-top table case so constructed that even the smallest specimens can be examined under an ordinary hand magnifying glass through the glass cover of the case.

The division of plants has for the first time been represented to the public by an exhibition of flower studies in water color, selected from a series of about 600 sketches by the late Miss Adelia Gates, recently presented by Miss Eleanor Lewis, her niece, and by others to whom they had been given by the artist during her life. The display, which has been installed in the same hall as the marine invertebrates, embraces a wide range of domestic and foreign plants as well as cultivated varieties.

Explorations.—No biological expeditions were sent out by the Museum during the year, but several field parties not connected with it were supplied with outfits or assisted in other ways, and material of considerable interest has been received in return. The principal explorations by which the collections have been benefited were conducted by other scientific bureaus of the Government, though the Museum is also greatly indebted to several individuals who have

given generous support to field work, mainly, if not wholly, in its interest.

Dr. W. L. Abbott, an associate of the Museum, continued his own explorations in the Himalayas, besides maintaining Mr. H. C. Raven in Dutch East Borneo, where, as elsewhere explained, he has been making large and valuable collections. Dr. Abbott recently sent Mr. Raven to the island of Celebes on a similar mission, and has placed at the disposition of the Institution sufficient funds to keep him in the field for another year. In July, 1913, Mr. John B. Henderson, a Regent of the Smithsonian Institution, made a dredging trip to the waters around Chincoteague Island, Va., taking with him as a guest Dr. Paul Bartsch, assistant curator of mollusks. They secured a large quantity of material, including several new mollusks. During May and a part of June, 1914, Mr. Henderson undertook a much more elaborate expedition to the region off the northwestern coast of Cuba, having chartered a fishing vessel and well equipped it for the purpose. By his kind invitation, Dr. Bartsch was again able to join in the work, his special mission being to collect and make special preparations of marine invertebrates needed for the West Indian fauna in the exhibition series. The party also included Mr. G. W. Gill, who was charged with reproducing the natural colors of specimens for the exhibits. The exploration was entirely successful, and its results, liberally shared with the Museum, consisted of both invertebrates and fishes secured by extensive dredging, towing, and shore collecting. Many specimens of land animals were also collected during occasional visits on shore.

With Dr. Alfred G. Mayer, director of the Marine Biological Laboratory of the Carnegie Institution, Dr. Bartsch again visited, during the latter part of April, the Bahama *Cerion* plantations on the Florida Keys, of which accounts were given in the last two reports. These transplantations of large numbers of two races of Bahama shells of the genus *Cerion* were undertaken to ascertain the effect of their transference to a new environment. During this year's examination the adults of the first generation were found, and most interesting results are reported regarding the changes which these present as compared with the material introduced. A trip made by Dr. J. N. Rose, as a research assistant of the Carnegie Institution of Washington, through portions of Colorado, New Mexico, and Texas, was productive of a large and valuable collection of Cactaceae and also of other groups of plants, a large proportion of which will be deposited in the Museum. Mr. G. S. Miller, jr., curator of mammals, spent part of his vacation, during February, 1914, at Biloxi, Miss., where he secured many interesting specimens. Other members of the staff on short trips have also added material to the collection, a large number of plants and some crayfishes hav-

ing been obtained by Mr. Paul C. Standley and Mr. H. C. Bollman in North Carolina, and a collection of marine invertebrates from Plum Point, Md., having been contributed by Mr. William Palmer.

Mr. Arthur de C. Sowerby continued his field work in Manchuria and northeastern China, sending two lots of mammals, only one of which was received within the year. In the course of anthropological investigations in northern Zululand, conducted under the direction of Dr. Aleš Hrdlička in the joint interest of the Smithsonian Institution and the Panama-California Exposition, Dr. V. Schück obtained the skeleton of a black rhinoceros and formalin preparations of several important carnivores, rodents, primates, and reptiles. Dr. Albert M. Reese, of the University of West Virginia, visited the Philippine Islands as a temporary collaborator of the Museum and secured for its collections many specimens of reptiles, batrachians, fishes, and marine invertebrates. Dr. Fred Baker, of Point Loma, Cal., also made a trip, which is still unfinished, to Oceania and the Orient, largely for the benefit of the Museum, and has already sent in a considerable amount of noteworthy material, especially fishes, from Fanning Island and the Philippines. Mr. H. Pittier, of the Department of Agriculture, while on furlough and conducting an investigation of the resources of Venezuela, made an extensive collection of the plants of that country, which he generously presented to the Museum.

Of Government explorations there were three which merit notice in this connection because of the immediate returns secured. One was the oceanographic cruise of the Fisheries schooner *Grampus* off the New England coast during July and August, 1913, in cooperation with the Museum of Comparative Zoölogy, the work being in charge of Dr. Henry B. Bigelow of that institution. Large collections of plankton were made from which many specimens of several groups have been transferred to the Museum. Prof. A. S. Hitchcock and Mrs. Agnes Chase, both of the Department of Agriculture, conducted extensive investigations with special reference to grasses, the former in southern California, Arizona, Utah, and Nevada, the latter in Porto Rico. Besides grasses, of which a large number were obtained, many other plants were secured in both regions, and the entire results have been deposited in the Museum. Prof. Hitchcock had with him as assistant his son, Mr. A. E. Hitchcock, who attended to the miscellaneous collecting.

DEPARTMENT OF GEOLOGY.

The total number of accessions pertaining to this department was 199, with an aggregate of 16,693 specimens, which were assigned to the several divisions and sections, as follows: Systematic and applied geology, 775; mineralogy and petrology, 2,873; invertebrate

paleontology, 11,041; vertebrate paleontology, 1,430; and paleobotany, 574. There were also received for examination and report 546 lots of specimens, of which 217 were geological, 280 mineralogical, and 49 fossils, and it is interesting to note that in the material sent for this purpose there has been a great increase in the proportional amount supposed to contain radioactive minerals. While the Museum has not the means for making detailed analyses of specimens, simple determinations are generally sufficient to decide their nature and general value and of all of the specimens received in this connection during last year only 27 were of any interest either to science or to the Museum.

Systematic and applied geology.—The Royal Ontario Museum of Mineralogy, of Toronto, Canada, transmitted as an exchange a series of rocks and ores illustrating the geology and petrology of the Sudbury nickel region and the Cobalt mining district, including some exceptionally good exhibition examples of native silver in gangue and of nickel-cobalt minerals. The American Vanadium Co., of Pittsburgh, Pa., presented a suite of the recently described Peruvian minerals quisqueite, patronite, and other forms. A gift from the Mason Valley Mines Co., of Mason, Nev., through Mr. Victor C. Heikes, consisted of a large specimen of native copper, weighing some 200 pounds and forming an attractive addition to the recently installed exhibition of this metal. Two sections of the trunk of a fossil tree impregnated with carnotite, quite unusual in character and important for display, were obtained from Grand Junction, Colo., by purchase. Also worthy of mention are the following gifts: From Mr. Charles H. Hussey, Mr. M. S. Duffield, and Mr. F. L. Woods, of Ogden, Utah, a piece of a 6-inch quartz vein, weighing over 100 pounds and containing an abundant development of blade-like crystals of tungsten ore; and from the Maine Feldspar Co., of Brunswick, Me., large specimens of pegmatite well illustrating the phenomenon of graphic intergrowth of quartz and feldspar, and many hand specimens of feldspar of the grade used in the manufacture of pottery.

Among the additions to the building stone exhibit were a slab of dark Mohegan granite, measuring 32 by 32 by 3 inches thick, and two 5-inch cubes, from Peekskill, N. Y., presented by the Mohegan Granite Co.; and two large slabs, measuring 78 by 20 inches, of "Mar Villa" marble from the quarries of the Beaver Dam Marble Co., at Cockeysville, Md. A number of slabs of marbles which had been submitted in connection with the competition for the Lincoln Memorial in Washington were contributed by the Amicalola Marble Co., of Ball Ground, Ga.; the Lee Marble Works, of Lee, Mass.; Wm. Bradley & Son, of Long Island City, N. Y.; the Colorado Yule

Marble Co., of Marble, Colo.; and the Beaver Dam Marble Co., of Baltimore, Md.

Important material for the meteorite collection, obtained by gift and purchase from Mrs. Coonley Ward, included a fine exhibition slab, weighing 12 pounds, of the Estacado, Tex., meteoric stone, and good exhibition examples of the Pultusk, Knyahinya, Gilgoin, Alfianello, Mocs, Canyon City, and Descubridora falls. Specimens of the Deep Springs, Hammond, Vigarano, Mount Browne, and Mount Dyring meteorites were also acquired through exchange.

The routine work of the year, aside from that connected with the exhibits, consisted, as usual, in the assorting, labeling, recording, and care of specimens. Much time was spent, however, in sorting out, labeling, and packing duplicate material for distribution to educational institutions, and so thoroughly was this done that no further systematic sets can be put up at present. Requiring the careful identification of every specimen used, the amount of labor involved in this work is much greater than is generally supposed. Two series were prepared, one comprising 100 sets of 85 specimens each of minerals and ores, the other 17 sets of 74 specimens each of minerals, rocks, and ores.

The head curator, Dr. George P. Merrill, continued the work begun in 1910, under a grant from the National Academy of Sciences, on the minor constituents of meteorites, and incidentally prepared a manuscript for an illustrated and descriptive catalogue of the Museum meteorite collection. The tests on the relative solubility of the various kinds of building stones, mentioned in last year's report, are approaching completion.

Mineralogy and petrology.—The most important accession, received from Mr. Walter M. Chandler, of Washington, consisted of 50 mineral specimens, including exceptionally good examples of wulfenite, crocoite, natrochalcite, and chalcanthite, obtained in exchange, besides an excellent specimen of malachite from northern Rhodesia and a boulder from Roberts Victor Diamond Mine, Orange River Colony, South Africa, which were presented. Mr. Clarence S. Bement, of Philadelphia, Pa., contributed six unusually fine specimens of benitoite, neptunite, maucherite, semseyite, and whewellite, and a rare form of fluorite. Fifteen minerals, mostly new and rare, and of special value for the reserve series, were received from Dr. F. Krantz, of Bonn, Germany, in exchange, and a fine large crystal of topaz from Texas was purchased.

Among the additional gifts were three fine specimens of cuprodescloizite, the type material of a variety recently described by Dr. R. C. Wells, of the Geological Survey, received from Mr. Philip D. Wilson, of Bisbee, Ariz.; a large specimen of hodgkinsonite, the type of this lately defined species, received from Mr. H. H. Hodgkinson,

of Franklin Furnace, N. J.; examples of the rare earths torbernite, autunite, carnotite, davidite, tyuyamunite, and cyrtolite, from various localities, all of which are especially desirable in the present condition of our knowledge regarding radioactivity, received from Mr. Frank L. Hess, of the Geological Survey; 11 specimens of native copper from Mexico, and 9 specimens of carnotite from Mauch Chunk, Pa., received from Lehigh University; one of the few, possibly three, known specimens of the mineral sulphohalite, from Dr. Samuel P. Sadtler, of Philadelphia, Pa.; an unusually large specimen of pollucite from Maine, from Mr. P. S. Dudley, of Buckfield, Me.; a large mass of carnotite on davidite, from Mr. F. J. Spence, of Adelaide, Australia; two specimens of ferberite, with chrysocolla, and a new copper tungstate in pegmatite, from Mr. S. H. Brockunier, of Nevada City, Cal.; a large mass of crystallized vivianite, from Mr. Charles Brown and Mr. John Pearson, of Dent, Idaho; and a stalactite coated with calcite and malachite crystals, an attractive exhibition specimen, from Mr. W. P. Jennings, of Salt Lake City, Utah. The type specimens of inyoite and meyerhofferite, and a large crystal of bloedite, all recently described by Dr. Schaller, were deposited by the Geological Survey; and 14 good exhibition specimens of pyrite and tetrahedrite were secured in exchange from the Deseret Museum at Salt Lake City, Utah.

All of the important accessions in petrology were received from the Geological Survey. They consisted of the usual quadrangle series from the following districts, namely, Eastport, Me.; Colorado Springs, Colo.; Philipsburg and Butte, Mont.; Tacoma, Wash.; Deming, N. Mex.; Santa Cruz, Cal.; and Ellijay, N. C.; besides a collection illustrating Bulletin 492 of the Geological Survey, entitled "The gabbros and associated rocks of Preston, Conn.," and a series of rocks collected by Mr. Whitman Cross at the Hawaiian Islands in 1902, and yet to be described.

Mr. Edgar T. Wherry, assistant curator of the division, who came to the Museum only at the beginning of the year, has had very little time for research work, having been mainly occupied with routine duties. He prepared one brief paper for publication and gave critical consideration to the nomenclature of minerals and the correct stating of mineral localities, with the view of standardizing the labeling of the collections. The assembling and preparation of an exhibition series of radioactive minerals also engaged his attention.

Invertebrate paleontology.—The Smithsonian Institution deposited about 150 type specimens of Cambrian fossils figured by Secretary Walcott in volume 57, Nos. 9 and 13, of the Smithsonian Miscellaneous Collections, and about 5,000 specimens of the unexcelled Middle Cambrian fossils from the Burgess shale of British Columbia,

collected by the Secretary, which, though containing no types, are most valuable as additions to the reserve and exhibition series. A second important lot of types, consisting of 150 specimens of Silurian Bryozoa and Ostracoda, was the result of a study, by the curator of the division, of the Yale University collections from the island of Anticosti, and were presented in the name of the Peabody Museum of Natural History. Still another series of types, represented by 25 specimens of *Exogyra*, described and figured by Mr. L. W. Stephenson in Professional Paper No. 81, of the Geological Survey, was deposited by the Survey. Other accessions from the Survey included a collection of Carboniferous invertebrates from the Manzano group of New Mexico, described by Dr. George H. Girty in Survey Bulletin 389; a single specimen, deserving mention from the fact that it is a figured echinoid from the Miocene of California; and some 30 slabs of shale containing numerous well-preserved fossil insects obtained in the Green River formation of eastern Utah by Mr. E. G. Woodruff.

About 3,000 specimens of Paleozoic fossils from various localities in Canada were received as a gift from Dr. E. O. Ulrich, of Washington, by whom they were collected during field work in the summer of 1913. They are particularly valuable as they were selected with special reference to the needs of the Museum, and certain early Silurian faunas in Ontario are well represented. A series of Tertiary mollusks and Ordovician graptolites from Australia constitute an important exchange from Mr. James Hay Young, of Meredith, Victoria. The graptolites have proved exceptionally interesting for comparison with American species, as their study has shown the identity of numerous species in these two widely separated areas.

Owing to the greatly increased subdivision of the geologic time scale, resulting from recent active work in stratigraphic geology and paleontology, it has become necessary to register and locate the collections of invertebrate paleontology in greater detail than was previously customary. While this requirement entails much additional labor, especially as regards the older collections, excellent progress has been made with the Cambrian, Mesozoic, and Cenozoic material, and the work is well under way with the general Paleozoic collections. The preparation and installation of the Cambrian collections has been rapidly advanced, as Secretary Walcott was able during last year to give more of his time than usual to its supervision. One of the results was that many of the faunal series previously filling a large number of drawers have, through the process of making them ready for study, been so reduced in bulk as to occupy a minimum amount of space. Of particular importance has been the accurate location in the Cambrian period of the numerous faunas from the upper Mississippi Valley. Through the efforts of the

Secretary and Dr. E. O. Ulrich, the lower Paleozoic section of this area was worked out in detail, and the representation of its fossils in the National Museum is the best of the Upper Cambrian or St. Croixian period extant. Other Cambrian material prepared and studied during the year was the Millward collection from China, the trilobites of the southern Appalachians, several collections from Idaho and Missouri, and the abundant material from the Burgess shale and other formations of British Columbia, obtained by the Secretary during the summer of 1913. These collections are in all cases quite extensive, the last mentioned consisting of 4,000 pounds of small, carefully selected specimens.

Work on the reserve collections of Paleozoic fossils in general proceeded as follows: About 100 standard drawers, containing approximately one-half of the Cambrian brachiopod types, were labeled, completing this task. All type specimens received during the year were catalogued and appropriately marked. About 200 drawers of specimens were furnished with locality tags, and approximately 2,000 additional drawers were overhauled preparatory to the same treatment. Thirty boxes were removed from storage and their contents examined and classified. All card catalogues were brought down to date. This amount of work was only made possible through the assistance of members of the Geological Survey, and especially of Dr. Ulrich. As a further aid, the services of a preparator were furnished for one year by the State geologists of Missouri and Wisconsin, in return for reports on the stratigraphy of those States, to be prepared by Dr. Ulrich, assisted by the curator.

The curator spent some time in the preparation of illustrations from Museum specimens for the monograph on Paleozoic starfishes, by Prof. Charles Schuchert, and he also selected and had figured about 250 specimens of Paleozoic Ostracoda, to be described in a contemplated monograph of these fossil crustaceans. Mr. Frank Springer, associate in paleontology, continued work on the classification and arrangement of the fossil echinoderms. He likewise identified the various collections of crinoids and blastoids obtained by him during the year and prepared several slabs of crinoids for exhibition. The Mesozoic fossils received were placed in museum shape by Dr. T. W. Stanton and Mr. T. E. Williard, and, with the exception of 25 boxes representing the Hyatt collection, all the Mesozoic material remaining in storage was withdrawn. The reception of 20 new steel cases relieved the very troublesome congestion which had prevailed, but at the same time it necessitated the entire rearrangement of the Tertiary collections in charge of Dr. W. H. Dall. With the assistance of Dr. C. W. Cooke, of the Geological Survey, this general arrangement was completed and a large quantity of unimportant and duplicate material was eliminated. An index card cata-

logue, by the aid of which any particular lot of Tertiary fossils can readily be found, is in course of preparation. Additional room space allotted to Dr. T. W. Vaughan also made requisite a complete rearrangement of the Tertiary corals, which was carried forward as far as cases were available.

The amount of research work accomplished was extensive. Secretary Charles D. Walcott completed and published his studies of the Dikelocephalinae trilobites, and on the Cambrian and its problems in the Cordilleran region. He also continued work on the pre-Cambrian Algonkian algal flora of North America, which has yielded unexpected results. Dr. William H. Dall finished a preliminary identification of the Tertiary fossils from the Panama Canal Zone, made good progress with his investigation of the Pacific coast Tertiary, and had about ready for submitting a monograph on the molluscan fauna of the *Orthaulax pugnax* zone of Florida.

Mr. Frank Springer completed the descriptive matter for the 75 quarto plates illustrating his monograph on the *Crinoidea flexibilia*, and brought the preparation of the text to such a point that he soon expects to send it to the press. The illustrations for his monograph on the crinoid genus *Scyphocrinus*, which had been delayed, were finished, and the work will shortly be ready for publication. With these important investigations disposed of, Mr. Springer expects to continue his studies on the Silurian crinoids of western Tennessee, the classic locality from which he has large collections. The illustrations for a large part of this work have already been made. Prof. William B. Clark, of Johns Hopkins University, and Dr. M. W. Twitchell, assistant State geologist of New Jersey, have collaborated on a monograph based mainly upon Museum specimens of the Mesozoic and Cenozoic Echinodermata of the United States, which will be published by the Geological Survey.

Dr. E. O. Ulrich, associate in paleontology, spent considerable time in a study of the early Silurian collections of the Museum, the results of which have been embodied in a bulletin entitled "The Medina and Clinton Formations of the Appalachian Valley," which has been offered to the Geological Survey for publication. Dr. Ulrich and the curator also prepared the text for the Cincinnati Folio of the Survey, in which many Museum specimens will be illustrated.

The principal contribution by the curator, Dr. R. S. Bassler, was in the form of a bulletin of 500 or more pages entitled "Bibliography and Synonymy of American Ordovician and Silurian Fossils," which contains, in addition to the matter indicated by the title, a register of the Museum's rich type collection of these two periods. The curator also completed a report on the early Silurian Bryozoa and Ostracoda of the island of Anticosti, Canada, based upon specimens now the property of the National Museum, which will be published

by the Canadian Geological Survey. He likewise continued work in joint authorship with Dr. Ferdinand Canu, of Versailles, France, on a monograph of American Tertiary Bryozoa, which at the end of the year had grown to such proportions that it became necessary to subdivide it. The first volume, which will deal with the early Tertiary Bryozoa, will be published by the United States Geological Survey.

Vertebrate paleontology.—Especially noteworthy among the accessions to this section were some 600 separate bones of vertebrates from the Blackfeet Indian Reservation in northwestern Montana, collected by Mr. Charles W. Gilmore, assistant curator, while on detail with the Geological Survey, by which they were transferred to the Museum. Aside from filling important gaps in the reptilian series, this material furnished the type of a new species, *Brachyceratops montanensis* Gilmore, as well as an exceptional specimen for exhibition. Also of much importance are several hundred specimens obtained by Mr. James W. Gidley, assistant curator, in the course of further explorations of the cave deposit near Cumberland, Md., begun the previous year. They include many nearly complete skulls, jaws, and articulate feet and limbs, belonging in part to genera and species not previously reported from the locality. A mountable skeleton and several good skulls of a new genus of peccary are notable; and bears, small carnivores, rodents, etc., are well represented.

Collections made by Mr. William Palmer and Mr. Norman H. Boss, of the Museum staff, in Miocene deposits near Chesapeake Beach, Md., contain a nearly complete skeleton, with skull and jaws, and a second nearly perfect skull of fossil porpoises, both suitable for exhibition purposes, besides several more or less fragmental parts of porpoises and other cetaceans. A small beak secured by Mr. Boss is of particular interest on account of the perfect preservation of the jaws and teeth. A skull, lower jaw, and five cervical vertebrae of the fossil bison, *Bison allenii*, from Alaska, a fine exhibition specimen, was obtained by purchase from Dr. O. P. Hay; and the type specimen of *Crossotolos annulatus* Case was received in exchange from Dr. E. C. Case, of the University of Michigan. Valuable material was also contained in 10 other small accessions.

Some 66 boxes of the "Marsh collection" were opened and their contents worked out. Much other material from the Geological Survey, resulting from more recent field work, was also made ready for study. The most important progress on the reptile collection comprised the mounting of the nearly complete skeleton of the new dinosaur, *Thescelosaurus neglectus*, and of a partial skeleton of the duck-billed form, *Trachodon*; the practical completion of the work of cleaning up the *Stegosaurus* material; the preparation of partial skeletons of five individuals of the Ceratopsian dinosaur *Brachy-*

ceratops, of specimens of the trachodont reptile *Hypacrosaurus*, and of the turtle *Echmatemys*; and the remounting of the hind limbs of *Allosaurus fragilis*. The principal mammalian material prepared was the fine porpoise skeleton from Chesapeake Beach, Md., and a considerable part of the collection from the Pleistocene cave deposit near Cumberland, Md. Complete or partial skeletons of *Brachyceratops montanensis*, *Stegosaurus*, *Trachodon*, *Sinopa*, *Euplatygonus*, *Epigaulus*, and *Canis dirus* were ready for mounting at the close of the year.

Mr. James W. Gidley, assistant curator in charge of fossil mammals, extended his study of fossil pycnodont fishes to include three additional forms, descriptions of which were published during the year. He also continued work on the Fort Union material and submitted a paper defining an important species apparently representing some of the living families of Australian marsupials. A second paper on two other groups of Fort Union mammals was practically completed. In addition to descriptions of several new species, it includes a general discussion in which a genus of the creodont family Arctocyonidae is advocated as representing the ancestral group which gave rise to the modern bears. Further investigation of this basal Eocene material emphasizes more and more its great importance. Already recognizable representatives of at least five modern groups of mammals, not heretofore believed to have existed at so early a stage, have been found, and the final result will doubtless be to very materially change the accepted theories regarding the derivation and phyletic relations of the later prehistoric and present-day groups of mammals.

Mr. Charles W. Gilmore, assistant curator in charge of fossil reptiles, completed an extended paper on the "Armored dinosaurs in the United States National Museum, with especial reference to the osteology of *Stegosaurus*," which had been in preparation for three years. He also published a description of the new genus and species *Brachyceratops montanensis*, a small horned dinosaur from the Upper Cretaceous of Montana, and made good progress on a more detailed account of the osteology of the same and of other reptiles from Montana, which will be issued by the Geological Survey under whose auspices the material was collected. The osteology of *Thescelosaurus*, a preliminary account of which was printed the previous year, was likewise the subject of study by Mr. Gilmore, and he had in preparation a chapter on the Dinosauria and other fossil reptiles for a geological guidebook to be published by the Survey.

The services of Dr. C. R. Eastman were secured to revise the collection of fossil fishes, on which he was engaged during the last half of the year. Over 5,000 individual specimens, besides a large number of fragments, were examined; old identifications were verified or

corrected, and the new materials described. A report upon this investigation remains to be submitted. Dr. O. P. Hay, who is engaged, under the Carnegie Institution of Washington, in the study of the vertebrate animal life of the North American Pleistocene period, was furnished, as heretofore, with accommodations for his work in the National Museum. Up to the present time his attention has been mainly directed to the larger land mammals, and primarily to a correct determination of the species found and their relation to the various divisions of the Pleistocene, as now recognized. In furtherance of this research he has studied the Museum collections as well as those elsewhere available, and is preparing important papers, accompanied by maps, showing the geographical distribution of all reported finds, some of which have already been published.

Paleobotany.—Three valuable type collections of fossil plants were received from the Geological Survey, as follows: About 150 specimens from Cape Lisburne, Alaska, obtained by Mr. Arthur J. Collier in 1904 and described by Dr. F. H. Knowlton; 168 specimens from the Tuscaloosa formation of Alabama, described by Mr. E. W. Berry; and a series of Cretaceous and Tertiary forms from South Carolina and Georgia, described by Mr. Berry. Another accession, comprising 45 specimens of fossil wood from the Leeward Islands, collected by the Geological Survey and the Carnegie Institution of Washington during joint field work, was acquired by transfer from the former and as a gift from the latter.

The most important work of the year was the completion of a card index of the Mesozoic and Cenozoic plants, which required the detailed overhauling of over 2,500 drawers of specimens, by Mr. T. E. Williard, of the Geological Survey, under the direction of Dr. F. H. Knowlton. With the preparation of a similar catalogue of the Paleozoic plants during the previous year, under Mr. David White, it is now possible to locate any parts of the paleobotanical collections without delay. Moreover, no fossil plant material remains in storage.

Dr. Arthur Hollick, of the New York Botanical Garden, spent over two months in a continuation of his studies on the Cretaceous and Tertiary floras of Alaska, while Dr. E. W. Berry, of Johns Hopkins University, was engaged in paleobotanic researches covering the Upper Cretaceous and Eocene strata of the Atlantic Coast Plain. Both of these pieces of work, which are being based on the Museum collections, are so extensive that several years will be required for their completion.

Exhibition collections.—For the display of new accessions of important mineral specimens, awaiting opportunity for their proper assignment, a Kensington case was provided near the east end of the mineral hall, and it will be possible to keep it approximately

filled at all times. In view of the exceptional interest in the subject at this time, a special collection of radio-active material was brought together, and is attracting much attention. It consists of all suitable specimens that were in the possession of the Museum, besides a number of others obtained for the purpose, and is arranged in a double American case, in which has also been placed a series of minerals illustrating physical properties as an introduction to the study of the systematic collection.

In the hall of applied geology a new exhibit of native copper, together with a small amount of naturally associated gangue minerals, was installed in one floor upright case. The pieces range from small hand specimens of arborescent growth to large thin sheets over 2 feet in diameter, and many grotesque forms are shown as well as specimens whose chief interest lies in the light they throw on the genesis and geologic associations of native copper. The two older cases devoted to copper now contain exhibits essentially of the compounds of this mineral. The general display of iron ores, comprising a little over 300 specimens, both domestic and foreign, was rearranged in three new wall cases, while that of the Tenth Census iron ores was enlarged and rearranged by species under States. The collection relating to the geology and mining industry of Leadville, Colo., was reorganized with such a selection and arrangement of rock and ore samples as will amply and systematically illustrate the subject as described in Emmons' report on the Leadville district. A series of ore specimens of silver, cobalt and nickel minerals in their natural gangue associations, from Cobalt, Ontario, was installed in a large case. Some of these are cut and polished and serve excellently to illustrate the paragenesis of the ores of this locality. In the same case the geology of the Sudbury district, Ontario, is also illustrated by a group of hand specimens of granitic and ore-bearing basic intrusives. Some large and notable examples of ornamental stones were added to the economic series, and the exhibit of natural substances used for abrasive purposes was much improved.

In systematic geology, the meteorite collection was rearranged to fill one wall and one American case, the section from the Marengo Cave was installed in a more fitting manner, and a collection of varied imitative forms and one showing Indian laterites were added.

In invertebrate paleontology the new installations comprised illustrations of the more important and characteristic fossil corals in an American case, a similar collection of fossil *Medusæ*, and smaller exhibits of fossil holothurians and echinoids. The crustaceans of the family *Eurypteridae* were rearranged to occupy the greater part of an upright metal case, and the final preparatory work and general restoring of the fossil crinoids in three upright cases were completed and permanent printed labels added. In vertebrate paleontology,

the skeletons of the two reptiles *Thescelosaurus neglectus* and *Allosaurus fragilis*, elsewhere referred to, were installed, the porpoise skeleton from Chesapeake Beach, Md., was temporarily placed, and a long wall case was utilized for partial skeletons of early mammals. In paleobotany the exhibit of fossil wood was improved by placing it in two long wall cases; several greatly enlarged photographs representing fossil forests of Carboniferous and Mesozoic age, and a number of large illustrations of restorations of Paleozoic plants, were added.

Explorations.—The only field work of importance was carried on in connection with the division of paleontology, although the head curator made some observations in the summer of 1913 while collecting feldspar for the educational series, and briefly studied a pyroxenite occurrence at South Freeport, Me.

Two explorations were conducted by Secretary Walcott during the season of 1913, one in the Robson Peak District of British Columbia and Alberta, Canada, the other at the celebrated Middle Cambrian localities near Field, British Columbia. In both regions the investigations of previous summers were continued and rich collections of fossils, including a number of new genera and species, were obtained. The material brought to Washington aggregated about two tons of carefully selected specimens. The curator of the division, Dr. Bassler, spent several weeks of the summer in continuation of his studies of the Cambrian and Ordovician rocks of western Maryland, completing the geologic mapping of this area and securing many fossils. During July, under detail to the Geological Survey, he mapped the Hamilton and Mason quadrangles of southwestern Ohio. In June, 1914, he made a trip through some of the Southern States, studying in detail the stratigraphy of certain Tertiary formations and collecting fossil Bryozoa required for the completion of his monograph on this group.

Under the direction of Mr. Frank Springer, Mr. Frederick Braun engaged in extensive collecting work during the season of 1913 in Illinois and adjoining States, with special reference to securing crinoids from the Chester division of the Mississippian. The results of this exploration have enabled Mr. Springer to definitely correlate certain upper Mississippian formations in various regions which have hitherto been in doubt, and several excellent slabs of crinoids and blastoids, invaluable for exhibition purposes, were obtained.

During six weeks of July and August, 1913, Mr. Charles W. Gilmore was detailed to the Geological Survey to enable him to collect Upper Cretaceous vertebrate fossils in the Blackfeet Indian Reservation in northwestern Montana. Though the material obtained was not extensive in amount, it included a very valuable series of dinosaurian remains, none of which had previously been represented in

the Museum. Mr. James W. Gidley examined the Pleistocene cave deposit at Cumberland, Md., on several occasions, and secured much interesting material, including a nearly complete skeleton of a large peccary-like animal, besides many good skulls of this and other species, some of which had not previously been discovered. He also visited a cave deposit at Renick, W. Va., on the Green Brier River, where specimens similar to those found at Cumberland, were collected. A few short trips were made by Mr. Norman H. Boss and Mr. William Palmer to the Miocene marl deposit in the vicinity of Chesapeake Beach, Md., where they obtained some 30 specimens of fossil cetaceans, including one fine porpoise skeleton and several more or less complete skulls of porpoises and whales.

Dr. E. T. Wherry spent three weeks during June, 1914, under the auspices of the Geological Survey in areal mapping for the folio publication of the Reading and Allentown quadrangles in eastern Pennsylvania.

THE ARTS AND INDUSTRIES.

Textiles.—As was to be expected, with the spread of information as to the organization and activities of this division, so recently reestablished, there was a considerable increase during last year, both in the number of accessions and in the general value of the material received, manufacturers and others entering cordially into the scheme of building up a collection that would be both comprehensive in its scope and practical in its purposes. Following are the more important of the accessions, all of which were of the nature of gifts except where otherwise stated:

The Messrs. Cheney Bros., of South Manchester, Conn., added to their already important exhibition a large series of specimens illustrating steps in the processes followed in weaving, printing, and finishing silk goods; examples of silk scarfs made up from standard weaves of tie silks, and woven and knit cravats both finished and as they come from the loom or knitting machines; printed silk flags made during the presidential campaign of James G. Blaine, being among the earliest prints made on silk by copper rollers; and specimens of various kinds of taffeta, satin, grosgrain, ottoman, and velvet ribbons. This firm also presented the oldest model of the Grant silk reel, a machine invented in 1882 by James Munroe Grant while employed in the Hartford mill of the Cheney Bros., by means of which the thread forming the skein is crossed at regular intervals, the cross in the skein preventing tangling during dyeing and subsequent handling.

Samples of surface-printed broad silks, woven, printed, and finished in the American plant of the Duplan Silk Co., in New York, from designs prepared in the Martine School of Decorative Art,

Paris, under the direction of M. Paul Poiret, were contributed by the company. These silks are the first of the kind to be made in America and sold abroad, and are not generally recognized as of domestic manufacture. One of the patterns is printed with wooden blocks by hand, and is among the first of hand-block printing on a heavy silk fabric produced in this country.

Messrs. M. C. Migel & Co., of New York, presented specimens of "ad hoc" printing on pussy willow taffeta brocade, being examples of the first successful work of this nature done in the United States. The combination of the purity and transparent qualities of the block-printed colors with the bold relief effect of the brocade pattern and the softness of the pure dye taffeta fabric gives very rich and beautiful results. From Messrs. E. & Z. Van Raalte, of New York, the Museum received a series of 24 styles of American-made face veilings, the first high-grade material of this character designed and made in this country; from the Forest Silk Co., of New York, 12 samples of brocaded novelty silks used for dress trimmings, of designs prepared for the fall season of 1914; and from Mitsui & Co., of New York, a commercial package or "book" of the best grade of raw Japanese silk, showing the method of packing and wrapping to exclude dust and moisture.

A collection of fancy wash dress goods and shirtings from the Aberfoyle Manufacturing Co., of Chester, Pa., comprises pleasing and artistic combinations of plain, ratine and mercerized cotton yarns with spun silk and viscose silk in plain and fancy weaves. Most of the samples represent goods manufactured for the fall season of 1914 and exhibited in the Museum before being sold to the public.

The Bureau of Animal Industry of the Department of Agriculture deposited in the Museum the extensive collection of wools and woolen products illustrating methods of grading and manufacture and suggested improvements in breeding and marketing raw wools, which had been prepared by the Division of Animal Husbandry for the conference of growers and manufacturers of wool held in Washington, June 2-4, 1914. The series includes examples of the deteriorating effects of disease and poor range on the quality of the wool and of the defects shown in finished fabrics traceable to improper methods of marking sheep and tying fleeces. It also contains specimens illustrating the steps in the processes of worsted spinning by both the English and French systems and the preparation and mixing of raw materials for the manufacture of woolen fabrics. From the Pacific Mills, at Lawrence, Mass., through Messrs. Lawrence & Co., there was received a collection of 3-yard samples of piece-dyed worsted dress goods and linings, including serge, diagonal, panama cloth, luster cloth, crêpe, voile, batiste, challie, prunella cloth, ratine, albatross, coat linings, etc.

The Universal Winding Co., of Boston, Mass., placed in the Museum as a loan their original gyroscope machine, which has served as the basis for many other patents. By the system of winding developed by this appliance the thread or yarn is laid on a supporting cylindrical or conical center in regular helical coils which reverse with a sharp bend, each coil crossing over the preceding one, binding it in place at each crossing. The coils form a compact self-supporting package and when unwound deliver the yarn without twisting or tension. The same company also contributed a series of specimens illustrating the various kinds of work done by their machines, including the winding of such materials as raw, spun, and artificial silk, fine and coarse, plain and mercerized cotton yarns, glazed twine, shoe thread, binder twine, jute and cotton cords, asbestos yarn, tape, sisal rope, japanned wire, etc. These materials are wound in packages of various sizes and shapes and on tubes, cones, quills, bobbins, cops, etc.

For samples of white and colored fancy cotton and cotton and artificial silk dress goods, including matelassé, piques, ratines, and other seasonable wash goods, the division is indebted to Lesher, Whitman & Co., of New York; for 85 samples of plain and fancy cotton wash dress goods, stock or yarn dyed, and woven in plain, checked, plaid, and striped effects, to the Parkhill Manufacturing Co., of Fitchburg, Mass.; for specimens of old English hand-printed chintzes, fabrics, and designs which are being revived and are now in favor for interior decoration and upholstery, to Witcombe, McGeachin & Co., of New York; for examples of crinkled seersucker, Jap crêpe, Devonshire cloth, and zephyr madras woven from plain and crêpe cotton yarns, and of satin-finished cotton table damask, to the Renfrew Manufacturing Co., of Adams, Mass.; for specimens of fancy printed velveteens, used for millinery trimmings and for vestees, including examples of pigment printing in gold and silver effects, to Messrs. Henry Kupfer & Co., of New York; for samples of cotton and silk dress goods and linings, including cotton fabrics finished to imitate those made of silk and of wool, to Messrs. A. G. Hyde & Sons, of New York; for samples of imported and domestic cotton dress goods woven from novelty and ratine yarns, which meet the demands of the season for rough-surfaced fabrics, to Woodward & Lothrop, of Washington.

Messrs. William Liddell & Co., of New York, contributed specimens of fine grass-bleached Irish linen, unbleached damask table-cloth linen, fine linen damask tablecloths made in Belfast, and also a series of flax products from the seed to the finished fabric.

The donations of ribbons included warp-printed and satin-brocaded ribbons, comprising some of the very finest material of this character produced in the United States, from Messrs. Smith & Kaufmann, of

New York; a collection of pure dye silk ribbons, made, finished, moiréed, etc., in Paterson, N. J., and woven on high-speed looms of American manufacture, consisting of examples of satin, taffeta, grosgrain, ottoman, and warp-printed ribbons, from the Taylor-Friedsam Co., of New York; and a representation of broad ratine ribbons with slightly rippled silk stripes in bayadere style, made from cotton and artificial silk, which are extensively used for millinery trimmings and girdles, from Messrs. Pelgram & Meyer, of Paterson, N. J.

A very instructive exhibit of specimens and photographs illustrating the manufacture of fur felt hats was presented by the John B. Stetson Co., of Philadelphia, Pa. It includes raw and carotted beaver, nutria, hare, and coney skins; samples of graded, blown, and sorted furs; specimens of all the kinds of leather and silk trimmings used, together with both soft and stiff hats in the several stages of manufacture, from the formed hat body to the finished hat; and also an assortment of soft and stiff hats characteristic of certain styles. The manufacture of linoleum, including the raw materials, examples showing the effect of successive printings, and patterns of different types of finished goods, is also represented in the same manner in a contribution from the Armstrong Cork Co., of Lancaster, Pa. A series of specimens illustrating successive stages in the knitting, cutting, and finishing of infants' underwear, of which the materials are fine Australian worsted yarn with cotton, or a mixture of silk and fine Australian wool, was received from the Earnshaw Knitting Co., of Chicago, Ill. The garments are trimmed with a special twistless tape, woven from right-and-left twisted yarns, so that the child may be dressed without the use of pins or buttons.

Acknowledgments are due to the Cassella Color Co., of New York, for a collection of coal distillation products and dyestuffs illustrating the artificial color industry, prepared especially for the Museum. It includes the principal products obtained from coal, the middle products which serve as the source of the several important series of artificial coloring matters, and examples of typical, standard dyestuffs. Instead of being arranged on the lines usually adopted for elucidating the development of organic chemistry, the collection has been made comprehensive from the standpoint of the textile industry, the names used being such as are referred to in scientific and technical literature and are well known in the industry.

A number of baskets and hand-woven textiles, made by the mountaineer people of Kentucky, North Carolina, and Virginia, being examples of the fine handicraft work of these neglected Americans, were purchased from the Southern Industrial Educational Association; and a hand-woven coverlet made in 1827 by Miss Elizabeth Harmon in Highland County, Va., an excellent and carefully preserved specimen of hand weaving, was also purchased.

The Bureau of Education at Manila, P. I., furnished in exchange a series of five grades of knotted abaca fiber and implements for spinning and reeling the same and cotton. Each grade is nested in a basket and weighted down with gravel to prevent tangling while being reeled. After careful grading, the fibers are tied end to end, using a small, hard knot, following which the resultant continuous fiber is treated like a spun yarn. There is a very large trade in knotted abaca for both home consumption and export; it is woven into fabrics and hat braids. A tiré filet bedspread and bolster made by expert needlewomen in Porto Rico, a beautiful example of the handicraft work of these people, prepared as a wedding gift for a prominent American girl, was purchased.

Besides textiles and textile materials, this division was the recipient of several important additions of other animal and vegetable products. The Bureau of Fisheries furnished a series of specimens of the species of fresh-water pearl shells from the Mississippi Valley which are used for the manufacture of buttons. It contains examples of the large shells, furnishing as many as 60 buttons each, which were common 20 years or more ago, as well as of the very young shells, from which only a single button can be cut, and which are now being utilized. The Hawkeye Pearl Button Co., of Muscatine, Iowa, presented a collection showing the different steps in the manufacture of pearl buttons, accompanied by a series of finished and carded buttons, and a model of the type of boat and drag used in collecting the shells in the fresh-water streams. The manufacture of pearl and vegetable ivory buttons is illustrated in a contribution from Messrs. Rothschild Bros. & Co., of New York, which relates principally to the utilization of marine forms furnishing mother-of-pearl, and includes specimens of raw and polished shells belonging to the genera *Margaritifera*, *Trochus*, *Turbo*, *Haliotis*, and *Unio*, besides seeds of a species of ivory nut palm of the genus *Phytelephas*. The making of buttons from vegetable ivory, furnished by seeds of *Phytelephas*, is also brought out in a gift from the Rochester Button Co., of Rochester, N. Y., which represents each stage in the process and contains samples of the waste produced in the sawing and turning of the raw material. The importation of these seeds or nuts for button making is rapidly increasing, the amount brought into this country in 1913 having reached 29,000,000 pounds.

A Mexican bridle of the old-fashioned type, made of finely cut and plaited rawhide and of perfect workmanship, was the only specimen of leather received. It was obtained, through exchange, from Mr. Ernest Thompson Seton, of Greenwich, Conn. A set of 18 Dutch standard sugar samples, a standard which, after being in use for 40 years in grading raw sugars for revenue purposes, was abolished

by the tariff act of 1913, was deposited by the Division of Customs of the Treasury Department. For samples of gums and resins collected in the market of Aden, British Arabia, by American Consul Walter H. Schulz, the Museum is indebted to the Bureau of Foreign and Domestic Commerce of the Department of Commerce. These substances constitute an important item in the trade of Aden, the principal varieties being gum arabic, myrrh, gum benjamin or benzoin, and frankincense or olibanum; and the possession of such authentic commercial specimens will serve a useful purpose for the identification of unnamed material. A number of specimens of tan barks collected in the Philippine Islands, together with a record of their chemical analysis, which shows a high percentage of tannin, were transferred from the Bureau of Plant Industry of the Department of Agriculture.

A collection of Panama woods, accompanied by botanical specimens from the same trees, obtained by purchase, supplements a larger one previously made by Mr. H. Pittier while a member of the Smithsonian Biological Survey of the Panama Canal Zone. These samples, which have been determined by Mr. Pittier and their structure studied by the Bureau of Forestry, will form the basis of a reference collection for the identification of future wood samples from this region. Two beautifully mottled boards of the finest grade of cypress lumber, 30 inches wide, 16 feet long, and carefully kiln dried, were obtained by purchase from the Lyon Cypress Lumber Co., of Garyville, La. A large section of the trunk of an empress tree, *Paulownia tomentosa*, growing in the Smithsonian grounds, which was destroyed by the severe storm of July 30, 1913, was received from the Office of Public Buildings and Grounds. It is a unique specimen of this beautiful wood, illustrating the great size attained by this Japanese tree.

As the time of the curator and preparators was practically all occupied in connection with the solicitation, cataloguing and installation of new material and the improvement of the exhibition series, but little progress was made in the arrangement of the study series. All accessions were promptly catalogued, and most of the specimens placed on exhibition were at once supplied with type-written labels, to be replaced later with printed ones. The main series of the principal textile fabrics—cotton, wool, silk, and flax—have been installed in the south hall of the older building, and represent a more or less permanent arrangement. The animal products have been temporarily placed in the southwest gallery, their final disposition being delayed in order to complete certain portions of the series. While the collections of vegetable products, including examples of the various kinds of woods, were added to considerably during the year, no attempt has been made to exhibit them, owing to their incompleteness.

Some progress was made in the compilation of the textile glossary, begun last year, new terms and definitions appearing in the trade papers and technical journals being carefully recorded, but until more time can be given to it it will be impossible to properly advance this important piece of work.

Several visits were made by the curator to textile centers of the country for the purpose of studying certain industries at first hand and of soliciting material for the division. The history of several important textile machines, including the Slater cotton spinning-frame, the first wool card built in the United States, the Carpenter yarn reel, and processes formerly used in the manufacture of flags for Army purposes were investigated at Pawtucket, R. I., and Lowell and North Andover, Mass. The other important trips were as follows: To Paterson, New York City, and Philadelphia, with reference to the dyeing and finishing of silks and ribbons and the manufacture of laces, artificial silk, and fur hats. To Manchester, N. H., and several places in Massachusetts and Rhode Island, to study the manufacture of ginghams, piece-dyed cottons, worsted and woolen goods, and to investigate certain questions concerning the early history of the textile industry in this country. To Chicago, Ill., for the examination of the exhibits and the methods of classifying, installing, and labeling specimens of textiles and of other industrial arts in the Field Museum, the Art Institute, and the museums of the Chicago Academy of Sciences and the Chicago Historical Society. The factories of the Earnshaw Knitting Co. and the Zeidman Haircloth Co. were also visited. To the silk-throwing mill of the Klots Throwing Co., at Fredericksburg, Va., where a careful study was made of the steps in the methods there employed. All of these trips resulted very advantageously for the Museum, since they permitted the curator to investigate closely the many processes of textile manufacture over a wide field and to indicate definitely the materials best suited to represent these processes in a museum exhibit. Received everywhere in a cordial spirit, he has been able to enlist the interest of many manufacturers in the collections now in course of assembling. Practically all of the important accessions of the year were secured through these means, and other acquisitions, which require more time for their preparation, are soon to be expected.

It should be possible, with the growth of its collections, for this division to render substantial aid to the interests of the arts and crafts outside of Washington, but at present it has not the necessary duplicate material for such cooperation. One set of specimens, however, was supplied to the Children's Museum of Boston to form the beginning of an industrial room in that institution. It consisted of cotton bolls, raw cotton, silk cocoons, raw silk, unwashed, washed, and combed wool. The curator lectured on textile processes before

the Deutsch-Amerikanischer Techniker Verein of Washington in the Museum building on January 18, 1914, a report of which was published in the *Technologist* for March, 1914. The Museum is greatly indebted to Mr. Charles E. Lotte, treasurer of the National Silk Dyeing Co. and a member of the board of managers of the Silk Association of America, for his cooperation in securing the interest of manufacturers and importers in the textile exhibits, which has resulted in materially enriching the collections of silk fabrics.

Mineral technology.—Although not actively organized until June, 1913, a considerable amount of material relating to the objects of this division had previously been assembled, mainly through the generosity of exhibitors at the St. Louis exposition of 1904. The total number of accessions reported for the past year, including some of the St. Louis donations which had not previously been recorded, was 26. The more important of these were as follows:

An industrial exhibit illustrating processes in the art of glass making, designed by Mr. George A. Macbeth, president of the Macbeth-Evans Glass Co., of Pittsburgh, Pa., and received as a gift from the company. This accession includes models of the two standard types of furnace in current use, namely, the tank-furnace and the pot-furnace, of about one-sixteenth actual size, reproducing the originals in all particulars and so constructed as to reveal working details throughout. They furnish, therefore, an exceedingly valuable demonstration for the technical as well as untechnical visitor. Mr. Macbeth has given freely of his personal attention to the planning of these and other features of the series, and only minor gaps remain to be filled before its permanent installation. It will constitute a full display of the processes involved in glass manufacture, unique in its technical accuracy and in its completeness of representation as a glass exhibit the world over.

A complete working model of a bituminous colliery, presented by the Consolidation Coal Co., of Fairmont, W. Va. This is an exact replica of the company's mine at Fairmont, on a scale of one-twelfth natural size, and occupies a floor space of 30 by 40 feet in the southwest court of the older Museum building. The model shows, in addition to a portion of the mine workings, the haulage system, tipple, washery, coke plant and other surface improvements, and also the adjoining portion of the miners' village. Not only does it exemplify in actual working details the various operations connected with the mine itself, but from its setting the visitor's imagination may visualize accurately the social conditions typical of a coal-mining community.

A reproduction, one forty-eighth natural size, of the First Pool No. 2 mine of the Pittsburgh Coal Co., at Willock near Pittsburgh, Pa., contributed by the company. While this model copies faithfully

the surface conditions at the mine, its most significant feature is the clear comprehension it imparts of the system of coal mining in common vogue in this country, known as the room and pillar system. In this respect it is an excellent companion piece to the one previously mentioned, whose dominating exhibition feature is its depiction of surface operations. The model covers a floor space of 8 by 12 feet.

A relief panel illustrating processes involved in the manufacture of illuminating gas, tar, ammonia, and other coal products in what is known as the by-products coke industry, and designed to set forth these complicated processes in the most readily comprehensible manner. For a most admirable solution of this problem the Museum is indebted to Mr. C. G. Atwater, of the American Coal Products Co., of New York, and Mr. C. H. Ramsburg, of the H. Koppers Co., of Chicago, in accordance with whose plans the exhibit was constructed in the division workshop.

Seven pictorial enlargements, $3\frac{1}{2}$ by 6 feet in size, showing typical underground operations incidental to coal mining, the gift of the Jeffry Manufacturing Co., of Columbus, Ohio, are remarkable examples of photographic art, in view of the extreme difficulty of the subject, and add greatly to the educational value of the coal series now being developed.

A series of native gypsum and gypsum products, presented by the United States Gypsum Co., of Chicago, Ill., which has given generous cooperation in connection with the entire subject, forms part of an industrial exhibit designed to cover the occurrence, mining, treatment, and industrial adaptability of this mineral.

A collection illustrating crude mica and its industrial products, constituting part of an exhibit in which the occurrence, technology, and uses of mica will be summarized, contributed by the Westinghouse Electric Manufacturing Co., of East Pittsburgh. A most remarkable 45-pound specimen of pure mica in its natural condition was the gift of the Ridgeway Mica Co.

The materials pertaining to mineral technology, which had been accumulating previous to the organization of the division, were found packed in more or less inaccurately or incompletely labeled boxes, stored in various places. During last year all of these boxes except such as contained only ornamental terra cotta were opened and suitable disposition made of their contents. The greater portion of the specimens proved to be wholly unsuitable for use along the accepted lines of development of the division, and were either returned to the donors or destroyed. Of the remainder, a part was listed and filed away, to be drawn upon as required, and the balance at once prepared for exhibition, which demanded extensive repairs and cleaning, and in some cases even rebuilding. The principal exhibits so attended to were the large working model of the Consolidation Coal Co.'s colliery at Fairmont, W. Va.; the colliery

model representing the Pittsburgh Coal Co.'s operations at Willock, near Pittsburgh; a model of the Takashima coal field, Japan; a model of the Western Coal & Mining Co.'s colliery at Jenny Lind, Ark.; a model of the Fayal iron mine at Eveleth, Minn.; and a blast furnace model.

The value of the systematic series covering the coal and coal-products industries was further enhanced by the addition of four models designed and constructed within the division, representing, respectively, a Bennington coke pile, a non-by-product rectangular coke oven, a gas bench, and a complete by-products plant according to Koppers' system. A rather unique supplement to the coal series proper, also devised and constructed by the division, represents the coal resources of the world, as apportioned by kind and amount among the various countries and individual States of the Union. The foregoing were all permanently installed during the year, with descriptive labels explaining the nature of conditions and operations represented. All accessions of the year from outside sources were also placed on exhibition in either permanent or temporary form.

DISTRIBUTION AND EXCHANGE OF SPECIMENS.

There was distributed to schools and colleges for educational purposes an aggregate of 14,564 duplicate specimens, besides about 400 pounds of rock and mineral fragments suitable for blowpipe instruction, all properly identified and labeled. The majority of the material was put up in regular series, the sendings of which were as follows: Mollusks, 22 sets of 174 specimens each; fossil invertebrates, 33 sets of 40 to 54 specimens each; minerals and ores, 26 sets of 84 to 86 specimens each; rocks, minerals, and ores, 7 sets of 74 specimens each; and rocks, 2 sets of 70 specimens each. The special educational distributions comprised 58 lots with an aggregate of 6,279 specimens, of which over 90 per cent consisted of marine invertebrates, fossils, and geological specimens, though nearly all the subjects of the scientific divisions were represented.

In exchange transactions a total of 15,224 specimens were used, of which 11,967 were botanical, over 1,500 geological and paleontological, the remainder belonging to the several divisions of zoology and anthropology.

As to the specimens sent out for study only approximate figures can be given, as in many cases they were in unassorted lots awaiting determination, this being especially so with the recent marine invertebrates and the fossil invertebrates. The figures as recorded are 10,256 for the department of biology and 5,425 for the department of geology, a total of 15,681 specimens, besides 107 lots of fossils, and 746 lots of marine invertebrates. These specimens were dis-

tributed among a large number of scientific experts, both at home and abroad, for investigation and determination mainly for the direct benefit of the Museum, but partly in the interest of other institutions. All were to be returned, and some had been received before the close of the year.

Exchange relations were carried on during the year with the following establishments abroad: The British Museum of Natural History, London, the Royal Botanic Gardens, Kew, the Geological Museum, Cambridge, and Alexandra Park, Manchester, England; the Muséum d'Histoire Naturelle and the Herbarium of Prince Roland Bonaparte, Paris, France; the Kgl. Zoologisches Museum and the Rudolf-Virchow Krankenhaus, Berlin, the Königl. Botanisches Museum, Dahlem, Steglitz bei Berlin, the museum of the Geologisches Institut der Universität, Breslau, the Naturhistorisches Museum, Hamburg, the Museum für Völkerkunde, Leipzig, and the Zoologische Sammlung und Zoologisches Institut, Munich, Germany; the Botanisches Laboratorium, K. K. Universität, Graz, and the K. K. Naturhistorisches Hofmuseum, Vienna, Austria; the Conservatoire et Jardin Botaniques, Geneva, and the Musée d'Histoire Naturelle, Neuchâtel, Switzerland; the Royal Botanical Garden, Palermo, Italy; the Musée Royal d'Histoire Naturelle de Belgique and the Geological Survey of Belgium, Brussels, and the Université de Liège, Liège, Belgium; the Universitets Botaniske Museum and Zoologiske Museum, Copenhagen, Denmark; the Naturhistoriska Riksmuseum, Botaniska Afdelning, Stockholm, Sweden; the Kaiserlicher Botanischer Garten, St. Petersburg, and the Komitet Imp. Geograficeskago Musei Oscesstva, Irkutsk, Siberia, Russia; the Geological Commission of Finland, Helsingfors, Finland; the Durban Museum, Durban, and the Rhodesia Museum, Bulawayo, Rhodesia, Union of South Africa; the Botanic Gardens, Sydney, New South Wales, Australia; the Indian Museum and the Geological Survey of India, Calcutta, and the Royal Botanic Garden, Sibpur, India; the Botanical Garden, Lawang, Java; The Museo Nacional, San José, Costa Rica; the National School of Agriculture, Lima, Peru; the University of Alberta, Edmonton South, Alberta, the Provincial Museum and the Royal Ontario Museum of Mineralogy, Toronto, Canada.

NATIONAL GALLERY OF ART.

The most important acquisition of the year consisted in the formal transfer to the Smithsonian Institution by Mr. Charles L. Freer, of Detroit, Mich., on February 24, 1914, of 198 objects as additions to his munificent gift to the Nation, comprising all of the material which he had assembled since the last previous transfer on November 6, 1912. This contribution may be summarized as follows:

Of American works of art there were 20, namely, 1 oil painting and 3 pastels by Dwight W. Tryon, 2 oil paintings by Thomas W. Dewing, 1 oil painting by Abbott H. Thayer, 2 water colors by Winslow Homer, 2 oil paintings by John S. Sargent, 1 oil painting by John H. Twachtman, and 4 oil paintings, 1 water color, and 1 etching by James McNeill Whistler, besides the Coast Survey copper plate made famous by Whistler and 1 impression from the same. The oriental part of the collection aggregated 178 examples, and consisted of 19 paintings, of which 1 large screen, 1 panel, 4 kakemono and 6 makimono were Chinese and 7 makimono were Japanese; 23 pieces of pottery, of which 14 were Chinese, 5 Japanese, 3 Korean, and 1 Rakka; 58 bronzes, of which 56 were Chinese and 1 each Japanese and Babylonian; 65 objects sculptured in various kinds of stone, all Chinese; 8 figures in cast iron and 1 in pewter, of Chinese origin; 1 piece of Chinese and 1 of Persian glass; 1 Chinese rug, and 1 piece of Chinese velvet.

The original donation by Mr. Freer contained approximately 2,326 objects. In the deed of gift of May 5, 1906, by which conveyance was made to the Institution, it was provided that the collection should remain in the possession of the donor during his life and that he might make such appropriate additions to it as he should select. Additions have, in fact, been made continuously and on a lavish scale, and from time to time these have been formally transferred by supplemental deeds of gift, which now number 5 in all. They record in the aggregate a slightly larger number of objects than composed the first contribution and this remarkable collection has therefore been more than doubled during the intervening eight years.

Following is a brief summary of the original gift: The American examples numbered 859, and comprised 95 oil paintings by James McNeill Whistler, Dwight W. Tryon, Thomas W. Dewing, and Abbott H. Thayer; 42 water colors by Whistler, Tryon, and Thayer; 43 pastels by Whistler, Tryon, and Dewing; 1 silver point by Dewing; and 100 drawings and sketches, 3 wood engravings, 388 etchings and dry points, 164 lithographs, 22 original copper plates, and the decorations of The Peacock Room, by Whistler. Of oriental paintings there were 489, namely, 121 Japanese screens, 50 Japanese and 3 Chinese panels, 251 Japanese and 36 Chinese kakemono, 9 Japanese and 2 Chinese makimono, 4 albums of Japanese paintings and sketches, and 13 Tibetan paintings. Oriental pottery was represented by 953 pieces, of which 681 were Japanese, 92 Chinese, 84 Korean, 92 central Asian, 1 each Egyptian and Moorish, and 2 Grecian. The remainder of the collection consisted of 5 Chinese bronzes, 19 lacquered objects, and 1 decorated Japanese box.

The collection as constituted to-day contains approximately 983 examples of American art and 3,718 examples of oriental art, or a total of 4,701 pieces.

SUMMARY OF THE CHARLES L. FREER COLLECTION OF AMERICAN AND
ORIENTAL ART ON JUNE 30, 1914.

AMERICAN ARTISTS.

Thomas Wilmer Dewing. Twenty-six oil paintings, 9 pastels, and 1 silver point.

Childe Hassam. One oil painting.

Winslow Homer. One oil painting and 3 water colors.

J. Gari Melchers. One oil painting.

John Singer Sargent. Two oil paintings.

Joseph Lindon Smith. Two oil paintings.

Abbott Handerson Thayer. Eleven oil paintings and 1 water color.

Dwight William Tryon. Twenty-nine oil paintings, 2 water colors, and 16 pastels.

John Henry Twachtman. Two oil paintings.

James McNeill Whistler. Sixty-two oil paintings, 44 water colors, 32 pastels, 110 drawings and sketches, 1 album of sketches, 413 etchings and dry points (626 impressions), 172 lithographs (193 impressions), 3 wood engravings, 38 original copper plates (including the Thames set of 16, with an impression from each of the plates after they had been defaced, and the Coast Survey plate), and the entire decorations of The Peacock Room.

ORIENTAL PAINTINGS.

Screens. Japanese, 145; Chinese, 4.

Panels. Japanese, 69; Chinese, 32.

Kakemono. Japanese, 267; Chinese, 160.

Makimono or scroll paintings. Japanese, 18; Chinese, 131.

Albums containing from 4 to 78 paintings and sketches each. Japanese, 4; Chinese, 28.

Tibetan paintings, 13.

ORIENTAL POTTERY.

Japanese, 754; Chinese, 251; Korean, 224.

Central and western Asian, 295, of which 157 were from Rakka, 95 from Persia, 15 from Babylonia, and the remainder from miscellaneous sources, including Saltonabad, Hembodji, Djohar, Damascus, and Arabia.

Egyptian, 137; Moorish, 1; Greek, 3.

ORIENTAL BRONZES.

Chinese, 211; Japanese, 6; Egyptian, 7; Persian, 2; Grecian, 2; and 1 each from Korea, Babylonia, Syria, Cambodia, Anthia, Swank-holor Sukhotai, Chien-Rai (Western Laos), and an unknown locality.

STONE OBJECTS, SCULPTURES, AND CUTTINGS.

Chinese, 213 (including 81 jade objects); Japanese, 1; Egyptian, 20.

LACQUERED OBJECTS.

Japanese, 22; Chinese, 9.

GLASS.

A collection of ancient Egyptian glass, comprising bottles, vases, and miscellaneous shapes, numbering over 600 pieces. Also 1 piece each of Persian and Chinese glass.

WOOD CARVINGS.

Japanese, 12; Chinese, 2; Egyptian, 3.

MISCELLANEOUS OBJECTS.

Includes gold ornaments, medallions, etc., of Byzantine and Cypriote origin, ivory statuettes from Cambodia, and various objects from China, Japan, Korea, Egypt, and Damascus. The total number is 62.

It is interesting to note in this connection that during the past year Mr. Freer, with the cooperation of a distinguished architect of New York, has devoted much time to the preparation of tentative plans for the building to house this collection, the cost of erecting which has been provided for by Mr. Freer. This building will occupy a position near the other buildings under the Institution, and will be constructed of marble in a style indicative of its object and contributing an architectural feature worthy to be classed among the best in Washington. It is the present purpose to have a single story above a high basement, the former to be used for exhibition purposes, the latter to furnish student rooms, an auditorium, and facilities for whatever other requirements the administration of this large, varied, and valuable donation may call for.

Mr. William T. Evans, of New York, continued his benefactions to the Gallery, and by the gift of three oil paintings increased the collection which bears his name to 147 examples of the work of 105 contemporary American artists. In these donations Miss Clara Taggart MacChesney is represented by "A Good Story," which obtained a bronze medal at the Pan-American Exposition, a silver medal at the Louisiana Purchase Exposition, and the second Hallgarten prize of the National Academy of Design in 1901; Mr. Guy C. Wiggins, whose "Columbus Circle, Winter," was previously presented to the Gallery, by a painting of much merit, entitled "Gloucester Harbor"; and Mr. Addison T. Millar, recently deceased, by a canvas entitled "The Waterfall."

There were also 2 other donations aggregating 6 paintings, 5 in oil and 1 in pastel. One of these, by Du Bois Fenelon Hasbrouck, entitled "Autumn Landscape," was received as a gift from Mr. Frederic Fairchild Sherman, of New York, in memory of his wife, Eloise Lee Sherman. The remainder were presented by Mrs. Walter Shirlaw, and are as follows: "Portrait sketch of Walter Shirlaw at the age of 35," by Frank Duveneck, and 4 paintings by Walter Shirlaw, namely, "Bell Foundry, Germany" (study for "Toning of the Bell"); "Study Head—Madam Capri" (sketch made at one sitting); "The Inn, Germany"; and "Easter Morning," a decorative panel in pastel.

The loans to the Gallery were comprised in 12 accessions and consisted of 109 paintings and 3 pieces of sculpture. Of the paintings 81 were received for 2 special exhibitions, the others being regularly installed with the general collection. Mr. William L. Slater, to whom were returned in the autumn of 1913 the 25 paintings enumerated in the last report, at the beginning of June, 1914, again lent the following 19 examples, namely: Rembrandt, "The Rabbi"; Ruysdael, "The Dunes near Haarlem"; Corot, "Nymphs and Fauns"; Troyon, "Horses at Watering Trough"; Millet, "Seamstresses sewing on Shroud" and "The Drinking Place"; Diaz, "Forest of Fontainebleau" and "The Island of Cupids"; Rousseau, "Sunset in a Wood"; Daubigny, "Springtime"; Mettling, "Portrait of a Boy"; Raffaelli, "Winter Landscape"; Dupré, "Three Oaks" and "The Landing"; Madame Lebrun, "Portrait of a Lady"; Gaugengigl, "The Quartet"; Delacroix, "Return of Columbus to Court of Ferdinand"; Hobbema, "The Mill"; and Wyant, "Landscape." This most important series was installed in the same inclosure it had previously occupied, the northwest room of the Gallery, opposite that containing the valuable collection of Mr. Ralph Cross Johnson.

The other loans were as follows: From Mrs. Dora B. Amateis, of Falls Church, Va., portrait bust of the artist's son, in marble, by Louis Amateis. From Col. John Biddle, United States Army, portrait in oil of Maj. John Biddle, United States Army, by Thomas Sully. From Miss Susan D. Biddle, of Detroit, Mich., portrait of Eliza Bradish Biddle, wife of Maj. Biddle, by Thomas Sully. From Dr. Nathan Boyd, of Washington, copy of Titian's portrait of his daughter, and portrait of Beatrice Cenci, by G. Mazzolini. From Mr. H. K. Bush-Brown, of Washington, plaster cast of the bronze bust of Lincoln, by Mr. Bush-Brown, at the National Cemetery, Gettysburg. From the United States Capitol, Washington, through Mr. Elliott Woods, superintendent, the bronze doors for the west entrance to the Capitol, designed and sculptured by Louis Amateis. From Mr. Benson B. Moore, of Washington, three oil paintings: "Might is Right," by Z. Noterman; an interior, by L. Fissette, and another interior attributed to Adrian von Ostade. From Mrs. Julian

James, of Washington, an oil painting, "View up the Hudson," by Robert Weir. From Mr. William D. Wheeler, of Washington, a portrait in oil of the artist's daughter, Mrs. John H. Wheeler, and her sons, by Thomas Sully.

The Gallery was fortunate in being able to arrange for two important loan exhibitions, which were successfully carried out and proved exceedingly attractive. They were held in the large central room of the Gallery inclosure in the new Museum building, which they fully occupied, and followed one another closely, only two days intervening. Each was inaugurated by a special evening view, to which invitation was by card, and printed catalogues were issued for both. The first, extending from March 21 to April 21, 1914, was given in the name of the National Association of Portrait Painters, an organization formed for the advancement of art in the United States, the holding of exhibitions, and the ultimate establishment of permanent galleries for the exposition of its own and allied branches of art. The second, which continued from April 23 to June 15, consisted of the works of a single person, the well-known marine painter, Mr. William F. Halsall, of Boston and Provincetown, Mass.

The exhibition by the National Association of Portrait Painters comprised 25 portraits in oil by members of the Association, constituting the third annual exhibition of the Association in New York, and also shown at the Carnegie Institute in Pittsburgh, Pa. The artists and the paintings by which they were represented were as follows:

John W. Alexander. Portrait of Alexander C. Humphreys, LL. D., president, Stevens Institute of Technology.

Cecilia Beaux. Portrait of Mrs. William McL. Ritter.

Frank W. Benson. Portrait.

Adolphe Borie. Portrait of Mr. Eckley Brinton Coxe, jr.

William M. Chase. Portrait of the Artist, and Portrait of Mrs. Hall.

Brenetta Herrman Crawford. Portrait of Sarah Guernsey Bradley.

Earl Stetson Crawford. Portrait (lent by Countess Santa Eu-lalia), and Signorina Marguerita.

Howard Gardiner Cushing. Portrait of Miss Ruth St. Denis.

Lydia Field Emmet. Portrait of a Lady.

Charles Dana Gibson. Study.

Victor D. Hecht. Portrait of Mr. Charles Knoedler.

Robert Henri. "Pat."

Henry Salem Hubbell. Portrait of George Harris, D. D., president emeritus, Amherst College.

John C. Johansen. Portrait of Miss Virginia G., and Portrait of Mr. James Howard Kehler.

De Witt M. Lockman. Portrait group, "At the Ball," and Portrait of Mr. Sidney G. De Kay.

George Luks. Portrait.

Ellen Emmet Rand. Portrait of M. Gilibert.

S. Montgomery Roosevelt. Portrait of Miss J. H., and Portrait of M. A. de la G.

William T. Smedley. "The Shipbuilder."

Irving R. Wiles. "Laughing Girl."

The exhibition of marine paintings by Mr. William F. Halsall, of Boston, consisted of 56 pieces, the most conspicuous and important being a large canvas, about 10 feet high by 20 feet long, entitled "Our Glory—Battleship Oregon," which represents this famous man-of-war in pursuit of the Spanish cruiser *Cristobal Colon* during the naval engagement off Santiago de Cuba, in 1898, and for the purchase of which for the Government a bill is now pending before Congress. At the close of the exhibition, on June 15, three of the paintings were retained on more extended loan. One of these was the picture of the *Oregon*, the others being "The Ocean Rover" and "Like a Sheeted Ghost." Following is a complete list of the paintings shown:

Our Glory—Battleship Oregon.

The Ocean Rover.

Cloudy Day—Highland Light, Cape Cod.

Coronado Beach. (Owned by Mr. H. E. Baker, of Niagara Falls, N. Y.)

Surf—Easterly Weather.

Square and Fore-and-Aft Rig. (Owned by Mr. Theodore Hastings, of Boston, Mass.)

Clouds. (Owned by Miss Elizabeth Cheney, of Boston, Mass.)

Point Loma. (Owned by Mr. H. E. Baker, of Niagara Falls, N. Y.)

An Opalescent Sea.

Provincetown Harbor.

A Morning Breeze. (Owned by Mr. Theodore Hastings, of Boston, Mass.)

The Sentinel.

Sand Dunes—Cape Cod.

On the Georges.

St. Johns—Wood Boat.

Easterly Weather.

A Winter Knockabout.

Haul Out to Windward.

A Lee Shore.

In Pursuit. (Owned by Mrs. Louise Hughes, of Washington.)

Too Rough to Fish. (Owned by Mr. H. H. Fay, of Boston, Mass.)

The Mid-Watch. (Owned by Mr. Charles Francis Douse, of Boston, Mass.)
In Pacific Seas.
Tropical Seas.
On the Penobscot.
Pilot's Flare.
Wing and Wing.

Summer Moonlight. (Owned by Mrs. B. P. Cheney, of Boston, Mass.)
When Sleep Falleth on Men. (Owned by Mr. Marston Harding, of Lexington, Mass.)
A Dory Race—Provincetown.
A Vineyard Fisherman.
Mayflower—First Morning at Sea. (Owned by Mr. Carl F. Kaufman, of Boston, Mass.)
The Coming Fog. (Owned by Mrs. Carl F. Kaufman, of Boston, Mass.)
Mary and John. (Owned by Mrs. Elizabeth S. Cheney, of Boston, Mass.)
Like a Sheeted Ghost. (Owned by Mrs. Carl F. Kaufman, of Boston, Mass.)
Reefing Topsails. (Owned by Mr. Henry A. Wyman, of Boston, Mass.)
Moonlight. (Owned by Mr. M. O. Adams, of Boston, Mass.)
Coast of Maine.
Hove To. (Owned by Mr. William Whitman, of Brookline, Mass.)
A Winter's Calm. (Owned by Mr. H. H. Fay, of Boston, Mass.)
Camden Hills. (Owned by Mr. Henry O. Cushman, of Boston, Mass.)
Surf.
Rain and Wind.
The Graves Light.
South West Wind.
A Pilgrim Ship.
Surf and Sky.
Becalmed.
Down East.
Stormy Morning.
Sketch—Cuba.
Sketch—Cuba.
Coming Squall.
Becalmed.

Moonlight—Gloucester Harbor.

Moonlight.

Two paintings, both from the Evans collection, were, at the request of the artists, lent for exhibition. One was the painting by William Sergeant Kendall, entitled "An Interlude," which was shown at a special exhibition of works by Mr. Kendall in November, 1913, at Yale University, where this artist had recently been appointed director of the School of Fine Arts. The other was the canvas by Mr. John W. Beatty, entitled "Plymouth Hills," which was sent to the Anglo-American Exposition in London, May to October, 1914, to celebrate the Century of Peace and Progress of the English Speaking People.

The advisory committee on the National Gallery of Art, which is wholly honorary in its relations to the Museum, its members serving without compensation, reported on a number of tenders of gifts, some of which were found to be acceptable and others not. A few of the paintings in the collection were copied by artist students, and photographs of quite a number were furnished to writers for reproduction in papers and books on art. All paintings permanently acquired were photographed and glazed, and pedestals were provided for the statuary received.

The entire loan collection of Dr. George Reuling, of Baltimore, consisting mainly of early American paintings, was returned to the owner, and a number of other loans were also reclaimed.

ART TEXTILES.

Of eight accessions received for this collection, four were gifts and four loans, all but one coming from residents of Washington. The gifts comprised a piece of rare point de France et Personages from Miss Emily Tuckerman, a piece of Mechlin lace of the nineteenth century from the late Mrs. Elizabeth C. Hobson, through Mrs. Richard G. Lay, a cape of Mechlin lace from Mrs. Arnold Hague, and two pieces of Spanish macramé lace called "Gothic collars" from Mrs. Richard G. Lay.

The loans were as follows: Eight pieces of lace, consisting of Russian pillow lace, silk maltese bobbin lace, French blonde de Caen, Spanish blonde, Valenciennes, and an English thread lace collar, besides two hand-wrought undersleeves from the Misses Long; an antique Persian silk prayer rug, a carved ivory plaque, a silver plaque, and a carved ivory crosier from Mrs. Christian D. Hemmick; and a square of Gobelin tapestry of the Savonnerie period from Mrs. A. M. Van Dyke, of Lawtey, Fla.

Owing to the illness of Mrs. James W. Pinchot, under whom the direction of this collection continues, not much work was put upon it during last year, but it remains in excellent condition and is the subject of much attention from visitors. It is hoped that there will be an early increase in permanent accessions and that the material may soon be arranged on a more systematic basis. As it is, the collection is one of the most important displayed in any of the museums of this country.

MISCELLANEOUS.

VISITORS.

The total attendance of visitors at the new building aggregated 267,728 for week days and 61,653 for Sundays, the daily average for the former having, therefore, been 855, and for the latter 1,185. The total number who visited the older Museum building was 146,533, a daily average of 468, and the Smithsonian building, 102,645, a daily average of 328. There has been a steady increase in the attendance at the new building since it was first opened to the public, and a certain falling off at the other two buildings, owing to the dismantling of many of the exhibition halls by the withdrawal of the natural history exhibits. This condition is only temporary, however, and will soon be remedied by the rapid progress which is being made in the installation of the art industrial collections.

The following tables show, respectively, the attendance of visitors during each month of the past year and for each year since 1881, when the older Museum building was first opened to the public:

Number of visitors during the year ending June 30, 1914.

Year and month.	Older Museum Building.	New Museum Building.	Smithso- nian Building.	Year and month.	Older Museum Building.	New Museum Building.	Smithso- nian Building.
1913.				1914.			
July.....	12,870	21,103	9,345	January.....	7,133	20,977	5,609
August.....	19,371	29,630	13,238	February.....	8,563	22,040	5,434
September.....	16,459	27,689	11,730	March.....	10,430	25,340	6,592
October.....	12,454	30,752	9,287	April.....	18,256	38,860	12,692
November.....	8,144	29,537	6,391	May.....	11,570	34,315	7,799
December.....	8,145	21,524	6,498	June.....	13,138	27,614	8,030
				Total.....	146,533	329,381	102,645

Number of visitors to the Museum and Smithsonian Buildings since 1881.

Year.	Older Museum Building.	New Museum Building.	Smithso- nian Building.	Year.	Older Museum Building.	New Museum Building.	Smithso- nian Building.
1881.....	150,000	.....	100,000	1898-99.....	192,471	.....	116,912
1882.....	167,455	.....	152,744	1899-1900.....	225,440	.....	133,147
1883.....	202,188	.....	104,823	1900-1.....	216,556	.....	151,563
1884 (half year).....	97,661	.....	45,565	1901-2.....	173,888	.....	144,107
1884-85 (fiscal year).....	205,026	.....	105,993	1902-3.....	315,307	.....	181,174
1885-86.....	174,225	.....	88,960	1903-4.....	220,778	.....	143,988
1886-87.....	216,562	.....	98,552	1904-5.....	235,921	.....	149,380
1887-88.....	249,665	.....	102,863	1905-6.....	210,886	.....	149,661
1888-89.....	374,843	.....	149,618	1906-7.....	210,107	.....	153,591
1889-90.....	274,324	.....	120,894	1907-8.....	299,659	.....	237,182
1890-91.....	286,426	.....	111,669	1908-9.....	245,187	.....	198,054
1891-92.....	269,825	.....	114,817	1909-10.....	228,804	50,403	179,163
1892-93.....	319,930	.....	174,188	1910-11.....	207,010	151,112	167,085
1893-94.....	195,748	.....	103,910	1911-12.....	172,182	281,887	143,134
1894-95.....	201,744	.....	105,658	1912-13.....	173,858	319,806	142,420
1895-96.....	180,505	.....	103,650	1913-14.....	116,533	329,381	102,645
1896-97.....	229,606	.....	115,709				
1897-98.....	177,254	.....	99,273	Total.....	7,447,574	1,132,589	4,492,092

BEQUESTS.

Although the Museum has received many and some exceedingly valuable additions to its collections by bequest, it is only recently that financial assistance has been rendered it in this way. On the death of Dr. Isaac Lea, publisher and eminent naturalist of Philadelphia, in 1886, the Museum found itself in possession of his unrivaled collection of fresh-water mollusks of the family Unionidæ. His daughter, Miss Frances Lea, retained a deep interest in this collection, becoming, in fact, its patroness, and by the frequent gift of both specimens and of money for making purchases, she aided most materially in its enrichment. It remains to-day by far the most important and comprehensive collection of its kind in the world. Married in 1890, the daughter lived but four years longer, and on her demise she left to the Museum the fine series of gems and precious stones which her father had also assembled. Her trust in both collections was then assumed and faithfully continued by her husband, the Rev. Dr. Leander Trowbridge Chamberlain, who was made an honorary custodian in the Museum in 1897 and an honorary associate in 1905. The report of last year contains a brief account of Dr. Chamberlain's relations to the Museum and the announcement of his death at Pasadena, Cal., on May 9, 1913. In his will, offered for probate in New York City on July 23, 1913, generous provision is made for perpetuating the assistance so long rendered in person, a

benefaction of unusual importance to the Museum. At the close of the year the will was still in course of settlement, but its final execution is not expected to be much longer delayed. Its terms with reference to the Museum are as follows:

“Seventh: I give and bequeath to the Smithsonian Institution in the City of Washington and District of Columbia, the sum of twenty-five thousand dollars (\$25,000), in trust, the same to constitute a permanent fund which shall be known as the ‘Frances Lea Chamberlain Fund,’ the income of said fund to be used under the direction of the Secretary of the Board of Regents of said Institution, for promoting the increase, and the scientific value and usefulness, of the collection of gems and gem material, known as the ‘Isaac Lea Collection’ in the department of minerals in the United States National Museum, the said collection having been chiefly collected and given by me in honor of Dr. Isaac Lea and his only daughter, Frances Lea Chamberlain.

“Eighth: I give and bequeath to the Smithsonian Institution in the City of Washington and District of Columbia, the further sum of ten thousand dollars (\$10,000), the same to constitute a permanent fund which shall be known as the ‘Frances Lea Chamberlain Fund,’ the income of said fund to be used, under the direction of the Secretary of the Board of Regents of said Institution, for promoting the scientific value and usefulness of the collection of mollusks, known as the ‘Isaac Lea Collection,’ in the department of mollusks in the said Smithsonian Institution.”

Another testament, executed during the year, in which the Museum is made a beneficiary, is also of special interest in that it was made by Miss Lucy Hunter Baird, daughter of Prof. Spencer Fullerton Baird, the first assistant secretary in charge of the National Museum and the second secretary of the Smithsonian Institution. The death of Miss Baird occurred in Philadelphia, where she had long resided, on June 19, 1913. The articles in her will relating to the Museum were as follows:

“Fourth: * * * to the National Museum in the City of Washington, D. C., all articles deposited by my father, Spencer F. Baird, my mother, Mary H. C. Baird, or myself, in its keeping or that of the Smithsonian Institution with the exception of the specific bequests to the Smithsonian Institution contained in this Will. If there be any China of which I have made no other disposition, of any value to the Museum, I desire that it shall be placed therein.

“To the Smithsonian Institution, the copies of my father’s own books containing his notes in his own handwriting, also the books by Audubon or any other works on natural history, annotated in my father’s writing, to be kept forever in a case together.

"To the National Museum or to the Smithsonian Institution as my Executor shall deem best any pictures or books not otherwise disposed of, which they may desire."

By further terms of the will the Smithsonian Institution is made the residuary legatee in a certain trust estate, which, when released, is to constitute a trust fund known as "'The Spencer Fullerton Baird Fund,' the interest from which shall be devoted under the direction of the Smithsonian Institution to the expenses, in whole or in part, of scientific and biological research or for the purchase of specimens of natural objects or archeological specimens." The Museum may expect to benefit from expenditures from this fund. Under the article above quoted the Museum received early in the year from the executor of the estate of Miss Baird several hundred objects, comprising books, engravings and paintings, pottery, glassware, bronzes, photographs, historical objects, and personal relics of Prof. Baird, the last including a gold and a silver medal which had been presented to him in recognition of his important work in fish culture.

PUBLICATIONS.

The number of volumes issued during the year was 14, and of separate papers, 58. The former consisted of the annual reports of the Museum for 1912 and 1913; volumes 44, 45, and 46 of the Proceedings; and the following Bulletins, namely: No. 50, Part VI, "The Birds of North and Middle America," by Robert Ridgway, containing descriptions of the woodpeckers, barbets, toucans, puff birds, jacamars, kingfishers, toadies, motmots, goatsuckers, potoos, barn owls, and eared owls; No. 71, "A monograph of the Foraminifera of the North Pacific Ocean, Part III, *Lagenidæ*," and "Part IV, *Chilostomellidæ*, *Globigerinidæ*, *Nummulitidæ*," by Joseph A. Cushman; No. 80, "A descriptive account of the building recently erected for the departments of natural history of the United States National Museum," by Richard Rathbun; No. 83, "Type species of the genera of Ichneumon flies," by Henry L. Viereck; No. 84, "A contribution to the study of the Ophiurans of the United States National Museum," by René Kœhler; No. 85, "A monograph of the jumping plantlice or *Psyllidæ* of the New World," by David L. Crawford; No. 86, "A monograph of the genus *Chordeiles* Swainson, type of a new family of goatsuckers," by Harry C. Oberholser; and No. 87, "Culture of the ancient Pueblos of the Upper Gila River region, New Mexico and Arizona" (Second Museum-Gates Expedition), by Walter Hough. Bulletin No. 67, entitled "Directions for collecting and preserving insects," by Nathan Banks, was reprinted in a limited edition to meet the continuous demand for this popular pamphlet of instructions.

Of the 58 papers issued separately for prompt distribution to specialists, 5 were from volume 45, 35 from volume 46, and 9 from

volume 47 of the Proceedings, the other 9 constituting parts of the Contributions from the National Herbarium.

Approximately 77,800 copies of the above volumes and separates were distributed to the addresses on the regular mailing list, in addition to which about 15,400 publications of last year and previous years were sent out in response to special applications.

Besides the foregoing, many reports on Museum material were published by other bureaus of the Government and by private institutions, all of which are cited in the bibliography. Those printed in the Smithsonian Miscellaneous Collections to insure prompt issue numbered 31, as follows: "New races of antelopes from British East Africa," "New antelopes and carnivores from British East Africa," "The white rhinoceros," "New races of ungulates and primates from equatorial Africa," "New races of carnivores and baboons from equatorial Africa and Abyssinia," "Four new subspecies of large mammals from equatorial Africa," and "New subspecies of mammals from equatorial Africa," by Edmund Heller; "Descriptions of three new African weaver-birds of the genera *Estrilda* and *Granatina*," "Descriptions of four new African thrushes of the genera *Planesticus* and *Geocichla*," "Descriptions of six new African birds," "Descriptions of five new African weaver-birds of the genera *Othyrhynchus*, *Hypargos*, *Aidemosyne*, and *Lagonosticta*," "Descriptions of ten new African birds of the genera *Pogonocichla*, *Cossypha*, *Bradypterus*, *Sylvietta*, *Melaniparus* and *Zosterops*," and "Descriptions of eight new African bulbuls," by Edgar A. Mearns; "New Lower Cambrian subfauna," "Cambrian formations of the Robson Peak District, British Columbia and Alberta, Canada," "Dikelocephalus and other genera of the Dikelocephalinae," and "The Cambrian faunas of Eastern Asia," by Charles D. Walcott; "The comparative histology of the femur," by J. S. Foote; "Populus Macdougalii: A new tree from the Southwest," by J. N. Rose; "Great stone monuments in history and geography," by J. Walter Fewkes; "A new shrub of the genus *Esenbeckia* from Colombia," by K. Krause; "Fifty-one new Malayan mammals," by Gerrit S. Miller, jr.; "Notes on the recent crinoids in the British Museum," and "Notes on some specimens of a species of Onychophore (*Oroperipatus corradoi*) new to the fauna of Panama," by Austin Hobart Clark; "A new genus of Mallophaga from African guinea fowl in the United States National Museum," by John Howard Paine; "New Sapindaceae from Panama and Costa Rica," by L. Radlkofer; "Anthropological work in Peru in 1913, with notes on the pathology of the ancient Peruvians," by Aleš Hrdlička; "Descriptions of five new mammals from Panama," by E. A. Goldman; "On the relationship of the genus *Aulacocarpus*, with description of a new Panamanian species," by H. Pittier; "A new ceratopsian dinosaur from the Upper Cretaceous

of Montana, with note on *Hypacrosaurus*," by Charles W. Gilmore; and "Explorations and field-work of the Smithsonian Institution in 1912," being a summary of expeditions participated in during the year by the Smithsonian Institution and its bureaus and resulting, for the most part, in the acquisition of material for the Museum.

In addition to the publications, the editorial office has charge of all miscellaneous printing and binding, which includes a large variety of work.

LIBRARY.

The Museum library received 1,917 volumes, 1,723 pamphlets, and 132 parts of volumes during last year, and now contains 43,609 volumes and 73,765 pamphlets and other unbound papers. The central library is in the new building, where are kept the general works of reference and the publications relating to anthropology, zoology, and geology. The former library quarters in the older building are utilized for the works relating to the arts and industries, history, and botany, besides which each Museum division and each principal administrative office is allowed to retain in its immediate possession the books especially and solely pertaining to the subject of its affairs. The last mentioned, which at present number 30, are called sectional libraries. The central library was quite thoroughly organized and arranged before the close of the previous year, and during last year good progress in the same direction was made with the collection in the older building. The card cataloguing has been kept well up to date and of the scientific depository set of cards received from the Library of Congress about one-half, or approximately 28,000, were alphabetically filed.

For the use of the staff in the study of collections over 5,000 books were borrowed during the year from other Government libraries, mainly the Library of Congress.

A very large number of publications, the accumulation of many years, the most of which had never been actually united with the library, were critically examined and the greater proportion, consisting of duplicates or of works not necessary to the Museum, were rejected and disposed of.

New avenues of exchange insuring the acquisition of important publications not otherwise obtainable by the Museum were established. By bequest of Miss Lucy H. Baird, the library received about 750 volumes, many of them rare and costly, which had belonged to Prof. Spencer F. Baird, with others more recently added to the collection by the testator. Among other contributors were Dr. William H. Dall, Dr. O. P. Hay, Dr. C. W. Richmond, Dr. Edgar A. Mearns, Mr. Alfred Klakring, and Dr. Harriet Richardson Searle.

The sectional library of the division of mollusks contains approximately 7,500 titles presented by its curator, Dr. Dall, beginning with a large initial gift in 1892, which has been added to from year to year. Constituting its principal feature, this collection is supplemented by many works from other sources, including the bequest of Dr. Isaac Lea, which renders it one of the most complete consultative libraries on the subject in the country. A revised catalogue completed during the year furnishes a ready index to its contents.

The library is, unfortunately, confronted with a condition which seriously menaces the preservation of a large proportion of its contents, and it is important that this should be early remedied. Perhaps two-thirds of the publications it receives are in paper covers, a large share of these being parts of volumes. With the very limited funds available for the purpose, the amount of binding that can be done in any year is scarcely appreciable, and as long as the volumes remain unprotected, constant use causes their rapid deterioration and ultimate destruction, and most of these unbound works are not replaceable.

MEETINGS AND CONGRESSES.

The auditorium and other rooms in the new building were frequently used during the year for meetings and public gatherings having objects akin to those of the Institution, and also by several bureaus of the Government for official purposes.

The lecture courses of The Washington Society of the Fine Arts, three in number, were held in the auditorium, as during the previous year, between November 1 and April 15. They consisted of six lectures on architecture and the allied arts, given on Wednesday evenings; six lectures on modern masters in art, given on Tuesday evenings; and five lectures on the development of opera, given on Saturday evenings. The first two courses were illustrated with lantern slides, while piano and vocal illustrations were employed in connection with the last. For its regular meetings, which numbered 18, the Anthropological Society of Washington occupied the large assembly hall, except on one occasion when the auditorium was utilized. These meetings, which were held at 4.30 o'clock in the afternoon, generally on the first and third Tuesday of each month, continued from October 28 to June 4. The Spanish American Atheneum was given the use of the auditorium on the evenings of February 3 and 25 for its meetings and lectures. For the thirty-second stated meeting of the American Ornithologists' Union, which was in session during the mornings and afternoons from April 6 to 8, the auditorium and other accommodations were granted.

The National Academy of Sciences, in connection with its annual meeting from April 21 to 23, held only its public sessions at the Museum, which were devoted to the reading of papers during the morning and afternoon of the 22d, and the inauguration of the William Ellery Hale Lectures by Sir Ernest Rutherford, of the University of Manchester, England, who spoke on the afternoons of the 21st and 23d on "The constitution of matter and the evolution of the elements."

On the evening of October 20, 1913, His Serene Highness the Prince of Monaco delivered an address under the auspices of the Washington Academy of Sciences and the Anthropological Society of Washington, his subject being "Researches in oceanography and anthropology," but he spoke mainly upon the former topic, in which his own remarkable explorations and studies are so well and widely known. The lecture was illustrated with lantern slides and motion pictures, all relating to the work in connection with his own vessels, and the latter were of a remarkable character, including vivid scenes at sea, the depiction of which in this manner had never before been attempted.

On December 10 Dr. Aleš Hrdlička, of the Museum staff, spoke before the Medical Society of the District of Columbia on prehistoric pathology on the American continent, with demonstrations of extensive recently acquired medical and surgical material from the collections of the Museum. An illustrated lecture on the fauna of the Pleistocene asphalt at Rancho La Brea, Cal., was delivered on January 8 by Prof. John C. Merriam, of the University of California, under the auspices of the Washington Academy of Sciences; and on February 4 Dr. Josef Schumpeter, the Austrian exchange professor for Columbia University, lectured under the auspices of the George Washington University on "The Balkan situation." One of the semimonthly meetings of the Washington Society of Engineers, held in the auditorium on February 5, was devoted to addresses on the Navajo, Papago, Pueblo, and Menominee Indians by Dr. Samuel A. Eliot, Mr. Edward E. Ayer, and Mr. William H. Ketcham, members of the United States Board of Indian Commissioners, and by Dr. Joseph K. Dixon, leader of the Rodman Wanamaker expedition, motion pictures taken by this expedition being also shown. A lecture entitled "The musical uplift" was given by Mr. John C. Freund, editor of *Musical America*, on February 6, under the District of Columbia Chapter of the Guild of American Organists, the Rubinstein Club, and the Piano Teachers' Association; and on March 24 Mr. Henry C. Gauss spoke on "The Braddock trail," before the Columbia Chapter of the Daughters of the American Revolution. "Richard Wagner's *Parsifal Dichtung*" was the subject of an address before the Germanistic Society of Washington on April 2, by

Dr. Ernst Elster, professor at the University of Marburg, Germany, and exchange professor at Cornell University. The Washington Society of the Archaeological Institute of America met on April 3 to listen to a lecture on "Raphael," illustrated with lantern slides, by Prof. O. S. Tonks, of Vassar College. On the morning of April 17 a special program of American music was rendered under the auspices of the Friday Morning Music Club, and in the evening of the same day Sir William Willcocks, of Cairo, Egypt, lectured before the Home Club of the Department of the Interior, on "Reclamation and drainage in Egypt." The College Women's Association of Washington was given facilities for a meeting on April 21.

There were only three congresses during the year which made any use of the Museum's accommodations, and in connection with each of them but one meeting was held there. The Third International Congress of Refrigeration met in Chicago, but the formal opening session was held in the Museum auditorium on the morning of September 15, 1913, when an address of welcome to the delegates was delivered by the Secretary of State, Hon. William Jennings Bryan. The fourth annual meeting of the American Association for Study and Prevention of Infant Mortality occurred in Washington from November 14 to 17, and the address of its president, Dr. L. Emmett Holt, of New York, was given in the auditorium on the evening of the 14th, followed by an informal reception to Dr. Holt in the exhibition halls on the first floor. The Third International Congress on the Welfare of the Child, under the auspices of the National Congress of Mothers and Parent Teacher Associations, meeting in Washington from April 22 to 27, occupied the auditorium on the evening of the 25th for one of its sessions.

On the evening of April 18, 1914, a reception to the Daughters of the American Revolution was given by the Secretary of the Institution.

The Department of Agriculture held numerous meetings relating to its work, using sometimes the auditorium but more often the larger committee room, and occasionally also the foyer when there were specimens to exhibit. A hearing on the question of establishing Federal grades for commercial corn was given on October 29, 1913, and another relative to the enforcement of the food and drugs act on November 5. The food, dairy, and drug officials of the Bureau of Chemistry met on November 14 and 15; the annual conference of State and district leaders in farm management demonstration and club work was held, under the Office of Farm Management, from December 15 to 18; and the Federal Horticultural Board conducted a hearing on December 18 on the subject of potato quarantine. The Bureau of Plant Industry held weekly afternoon lectures from December 17 to March 11, except during the holiday season, dealing

with various phases of agricultural research and demonstration work by the Department. An apparatus devised by Dr. Wiener, of Vienna, for the treatment of milk was demonstrated by him, under the auspices of the Bureau of Animal Industry, on February 20; and a conference between representatives of the naval stores industry and the Bureau of Chemistry was held on March 5 and 6. A conference between the department and the woolgrowers took place on June 2, 3, and 4, and was accompanied by an excellent exhibition of wool specimens installed in the foyer. On the evening of June 26 the exhibition halls in the first story were opened to afford an opportunity for the officers and employees of the Department to unite in an informal reception to Dr. B. T. Galloway, Assistant Secretary of Agriculture, who had recently resigned from that position to take up university work.

As associated with the objects of the Department of Agriculture may be mentioned here a meeting of the American Pomological Society in conjunction with the Eastern Fruit Growers Association, the Northern Nut Growers Association, and the Society for Horticultural Science, which was held during what was termed "Fruit Week," or from November 17 to 22, 1913. Use was made of the auditorium and committee rooms, and the entire foyer was occupied for exhibition purposes, the display of fruit being exceptionally fine and many prizes being awarded. This meeting, and especially the exhibition, attracted many visitors, who were admitted to the part of the building occupied both day and evening.

At the Twelfth International Congress of Geology, held at Toronto, Canada, August 7 to 10, 1913, the Institution and Museum were represented by Secretary Charles D. Walcott and Dr. George P. Merrill.

SPECIAL EXHIBITIONS.

The competitive designs for the Lincoln Memorial by Mr. Henry Bacon and Mr. John Russell Pope, the Red Cross collection, the relief map of the Gatun dam and locks, and model of the Pedro Miguel locks, mentioned in the last report, remained on exhibition in the foyer of the new building and communicating rooms throughout the year.

The plans submitted in competition for the George Washington memorial building, received on May 2, 1914, were, after inspection by the jury of awards, installed on screens in one of the foyer rooms and opened to public view on May 9. There were also two loan exhibitions of paintings, which are fully described in connection with the National Gallery of Art. One, consisting of 25 portraits by members of the National Association of Portrait Painters, continued from

March 21 until April 21. The other, comprising 55 marine paintings by Mr. William F. Halsall, was held from April 23 until June 15.

ORGANIZATION AND STAFF.

It has been found advisable to change the designations of the two divisions of archeology, which has involved the shifting of responsibility for the custody of certain classes of material but no modification in the staff connected with them. The titles hitherto recognized have been "Prehistoric archeology" and "Historic archeology." In the division bearing the former name were included all antiquities, however modern, from America, while in the other were placed only so-called historic antiquities from other parts of the world. Under the present arrangement, which, though partly put in operation some time ago, was not officially recognized until last year, the divisions are termed "American archeology" and "Old World archeology," respectively, the classification assumed being, therefore, broadly geographical and without reference to the age of the antiquities. This classification is, moreover, more philosophical than the other, as the prehistoric collections of the two worlds do not touch at any point, and the historic phase of Old World archeology connects without break with the prehistoric. Mr. William H. Holmes, head curator of the department of anthropology, will continue the supervision of the division of American archeology, while Dr. I. M. Casanowicz, assistant curator, will be in charge of the division of Old World archeology. Mr. Neil M. Judd, aid in the division of ethnology, was on leave without pay from January 1 to April 30, 1914, to enable him to engage in field work for the Panama-California Exposition. Mr. Joseph B. Leavy was appointed philatelist in the division of history on November 5, 1913. Mr. Thomas W. Sweeny, who had been a preparator in the division of ethnology for many years and had taken an important part in the installation of the exhibition collections in the new building, died on April 4, 1914.

On his appointment as director of the museum of the California Academy of Sciences, Dr. Barton W. Evermann resigned the curatorship of the division of fishes, dating from March 31, 1914. Mr. Alfred C. Weed, aid in the same division, was granted a year's furlough from July 15, 1913, and on January 2, 1914, Dr. John O. Snyder, of Leland Stanford Junior University, began upon the revision of the extensive collection of fishes, as explained elsewhere. Mr. H. K. Harring, of the Bureau of Standards, was designated honorary custodian of the Rotatoria in the division of marine invertebrates on May 1, 1914, and Dr. Nathan Banks resigned his custodianship of the Arachnida in the division of insects on October 22, 1913. Mr. Copley Amory, jr., of Boston, Mass., was appointed honorary collaborator in zoology for two years, beginning June 1, 1914.

Dr. J. N. Rose, associate curator of the division of plants, was granted an indefinite furlough beginning February 19, 1914, to enable him to continue his studies of the Cactaceae under the auspices of the Carnegie Institution of Washington, and Mr. W. R. Maxon was appointed in his place. Mr. Glen P. Van Eseltine was made an aid in the division of plants from September 22, 1913.

Dr. Edgar T. Wherry was appointed assistant curator of mineralogy and petrology on October 25, 1913, in succession to Dr. J. E. Pogue, and Dr. James C. Martin, assistant curator of systematic and applied geology on November 12, in succession to Mr. Chester G. Gilbert. For his long and material assistance in the paleontological work of the Museum, Dr. E. O. Ulrich, of the Geological Survey, was designated honorary associate in paleontology on June 9, 1914, and Mr. Douglas B. Sterrett, also of the Survey, was made honorary custodian of gems and precious stones, dating from February 18. Mr. C. W. Mitman was appointed aid in the division of mineral technology on May 4, 1914.

It is a painful duty to announce the death, near the close of the year, of one of the most important figures in the history of the Museum. Frederick William True was born at Middletown, Conn., July 8, 1858, and received his collegiate education at New York University, from which he was graduated in 1878 as bachelor of science. In 1881 and 1897 he was honored by his alma mater with the degrees of master of science and doctor of laws, respectively. Immediately after leaving college he entered the scientific service of the Government, in which he continued during the remainder of his life.

His first appointment, in 1878, was as expert special agent in the fisheries branch of the Tenth Census, and in 1880 he served as custodian of the collections of the United States Fish Commission at the Berlin Fisheries Exhibition. The following year began his connection with the United States National Museum, in which his duties have been both varied and exacting. From 1881 to 1883 he was librarian, and during the first two of these years also acting curator of the division of mammals, becoming full curator in 1883. With the reorganization of the Museum in 1897, he was made head curator of the department of biology, though retaining direct supervision of the collection of mammals until 1909, when a curator was designated to relieve him of this care.

For nearly 30 years Dr. True was also charged with strictly administrative responsibilities, which greatly interfered with his scientific work. In the early part of the eighties he was designated curator-in-charge to enable him to act for the Assistant Secretary during his absence, the title being changed in 1894 to executive curator, with added duties. Following Dr. Goode's death in 1897 he served for

a short period, in the absence of Dr. Langley, as Acting Secretary of the Smithsonian Institution, and from then until 1901 the administration of the Museum fell mainly on Dr. True's shoulders. In another large field, that of international exposition work, Dr. True also served with distinction, having directed the preparation of the exhibits for, and represented the Institution and Museum at, Nashville in 1897, Omaha in 1898, Buffalo in 1901, Charleston in 1902, St. Louis in 1904, and Portland in 1905. On June 1, 1911, he was called from the Museum to become the Assistant Secretary of the Smithsonian Institution in charge of library and exchanges, which position he was occupying at the time of his death, on June 25, 1914. Dr. True was a member of the American Philosophical Society and the Academy of Natural Sciences of Philadelphia, a corresponding member of the Zoological Society of London, and a fellow of the American Association for the Advancement of Science, besides holding membership in various other societies.

Only those who came closely in contact with Dr. True can properly measure the extent of his worth to the National Museum, which was always uppermost in his mind. Of a retiring disposition, and with no conception of the meaning of rest, he labored unceasingly, going about but little, neglecting sports, though intensely fond of music, and dividing his hours mainly between the Museum and his home study. He was above all a profound student, though apt and thorough in business matters. He did nothing perfunctorily, but went to the bottom of every problem, and everything he undertook was done more by his own hand than in any other case with which I am acquainted. Dr. True was never more happy than when in the library he organized and to which he continued to give attention, but he knew as much of the making of books as he did of their arrangement, and for many years he was the chief adviser in the selection and printing of the Museum publications.

It had been Dr. True's early desire to make a specialty of one of the lower groups of animals, but finding his eyes not equal to the constant use of the microscope, he turned to the other extreme, the group containing the largest of all living animal forms. Although the author of a number of miscellaneous papers on mammals, Dr. True's scientific reputation is mainly based on his studies of the Cetacea, especially the whales, and also on the fact that through his persistent activity he brought together in the Museum one of the largest and most important collections of whales in existence. Owing to the universally large size of the members of this group, museums generally are satisfied with a few examples, which furnish no basis for comparison with the object of determining individual or geographic variations in these monsters of the sea. Through the efforts of Dr. True very much has been done to overcome this disadvantage

in Washington, and when he wrote his splendid monograph of the beaked whales, which are among the rarest objects in our collection, the National Museum was found to possess about one-fourth of all the material available, and of the rare genus *Berardius* it had nearly one-half. Besides visiting and personally inspecting the specimens in many other museums, he assembled an immense series of photographs of specimens and had at his command a vastly greater amount of material than any cetologist before him. Visits to the whale fishery in Newfoundland gave him exceptional opportunity for the investigation of specimens freshly caught, and the studies there made entered into the volume on the whalebone whales of the western North Atlantic compared with those of European waters, in which, contrary to previous deductions, the whalebone whales of both sides of the Atlantic were proved to be identical. In later years Dr. True began to give attention to the fossil whales of North America, regarding which he had already made some noteworthy discoveries. It is no exaggeration to say that Dr. True had become the greatest living authority on whales, and in that respect took rank beside Eschricht, Lilljeborg, Van Beneden, and Flower. He died in the midst of his studies, surrounded by rich material offering golden opportunities for the future.

THE MUSEUM STAFF.

[June 30, 1914.]

CHARLES D. WALCOTT, Secretary of the Smithsonian Institution, Keeper *ex officio*.

RICHARD RATHBUN, Assistant Secretary, in charge of the United States National Museum.

W. DE C. RAVENEL, Administrative Assistant.

SCIENTIFIC STAFF.

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William H. Holmes, Head Curator.

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Division of American Archeology: William H. Holmes, Curator; E. P. Uppham, Aid; J. D. McGuire, Collaborator.

Division of Old World Archeology: I. M. Casanowicz, Assistant Curator.

Division of Physical Anthropology: Aleš Hrdlička, Curator; R. D. Moore, Aid.

Division of Mechanical Technology: George C. Maynard, Curator.

Division of Graphic Arts: Paul Brockett, Custodian; Ruel P. Tolman, Aid. Section of Photography: T. W. Smillie, Custodian.

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Leonhard Stejneger, Head Curator; James E. Benedict, Chief of Exhibits.

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Division of Birds: Robert Ridgway, Curator; Charles W. Richmond, Assistant Curator; J. H. Riley, Aid.

Division of Reptiles and Batrachians: Leonhard Stejneger, Curator; R. G. Paine, Aid.

Division of Fishes: Barton A. Bean, Assistant Curator; John O. Snyder, Expert Ichthyologist.

Division of Mollusks: William H. Dall, Curator; Paul Bartsch, Assistant Curator; William B. Marshall, Aid; Mary Breen, Collaborator.

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Section of Hymenoptera: J. C. Crawford, in charge.

Section of Myriapoda: O. F. Cook, Custodian.

Section of Diptera: Frederick Knab, Custodian.

Section of Coleoptera: E. A. Schwarz, Custodian.

Section of Lepidoptera: Harrison G. Dyar, Custodian.

Section of Orthoptera: A. N. Caudell, Custodian.

Section of Hemiptera: Otto Heidemann, Custodian.

Section of Forest Tree Beetles: A. D. Hopkins, Custodian.

Division of Marine Invertebrates: Richard Rathbun, Curator; Mary J. Rathbun, Assistant Curator; Austin H. Clark, Assistant Curator; C. R. Shoemaker, Aid; H. K. Harring, Custodian of the Rotatoria; Harriet Richardson Searle, Collaborator.

DEPARTMENT OF BIOLOGY—Continued.

Division of Marine Invertebrates—Continued.

Section of Helminthological Collections: C. W. Stiles, Custodian; B. H. Ransom, Assistant Custodian; P. E. Garrison, United States Navy, Assistant Custodian.

Division of Plants (National Herbarium): Frederick V. Coville, Curator; W. R. Maxon, Associate Curator; P. C. Standley, Assistant Curator; Glen P. Van Eseltine, Aid.

Cactaceæ, Crassulaceæ, and Miscellaneous Mexican Collections: J. N. Rose, Custodian.

Section of Grasses: Albert S. Hitchcock, Custodian.

Section of Cryptogamic Collections: O. F. Cook, Assistant Curator.

Section of Higher Alge: W. T. Swingle, Custodian.

Section of Lower Fungi: D. G. Fairchild, Custodian.

Section of Diatoms: Albert Mann, Custodian.

Associates in Zoology: Theodore N. Gill, C. Hart Merriam, W. L. Abbott, Edgar A. Mearns, United States Army (retired).

Associates in Botany: Edward L. Greene, John Donnell Smith, J. N. Rose, Collaborator in Zoology: Copley Amory, jr.

DEPARTMENT OF GEOLOGY:

George P. Merrill, Head Curator.

Division of Physical and Chemical Geology (Systematic and Applied): George P. Merrill, Curator; James C. Martin, Assistant Curator.

Division of Mineralogy and Petrology: F. W. Clarke, Curator; Edgar T. Wherry, Assistant Curator; Douglas B. Sterrett, Custodian of Gems and Precious Stones.

Division of Palaeontology: R. S. Bassler, Curator.

Section of Invertebrate Paleontology: T. W. Stanton, Custodian of Mesozoic Collection; William H. Dall, Associate Curator of Cenozoic Collection; T. Wayland Vaughan, Custodian of Madreporarian Corals.

Section of Vertebrate Paleontology: James W. Gidley, Assistant Curator of Fossil Mammals; Charles W. Gilmore, Assistant Curator of Fossil Reptiles.

Section of Paleobotany: David White, Associate Curator; A. C. Peale, Aid; F. H. Knowlton, Custodian of Mesozoic Plants.

Associates in Paleontology: Frank Springer, E. O. Ulrich.

DIVISION OF TEXTILES:

Frederick L. Lewton, Curator.

DIVISION OF MINERAL TECHNOLOGY:

Chester G. Gilbert, Curator; C. W. Mitman, Aid.

NATIONAL GALLERY OF ART:

William H. Holmes, Curator.

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Registrar, S. C. Brown.

Property Clerk, W. A. Knowles.

Engineer, C. R. Denmark.

LIST OF ACCESSIONS TO THE COLLECTIONS DURING THE FISCAL YEAR 1913-1914.

[Except when otherwise indicated, the specimens were presented, or were transferred by bureaus of the Government in accordance with law.]

ABBOTT, Dr. WILLIAM L.: About 839 mammals, 701 bird skins, 6 skeletons, 2 nests and 2 eggs of birds, 3 skeletons and a skin of reptiles, 9 baskets and a specimen of native cloth, from Dutch Borneo, collected by Mr. H. C. Raven (56376: 56895); ethnological material and a few mammals, collected by Dr. Abbott in Halmahera Island, northwestern New Guinea, Amboin and eastern Celebes (in all 15 localities) (56963).

ABERCROMBIE, Miss. (See under Mrs. Thomas Hamilton Wilson.)

ABERFOYLE MANUFACTURING COMPANY, Chester, Pa.: 25 2-yard lengths and 116 $\frac{1}{2}$ -yard samples of fancy dress goods and shirtings made from cotton, cotton and spun silk, and cotton and viscose silk (56670).

ADAMS, CHARLES FRANCIS, Washington, D. C.: Full-length portrait, in oil, of Mr. Charles Francis Adams, by Robert W. Vonnoh (55690: loan).

ADAMS, MRS. CHARLES FRANCIS, Washington, D. C.: Portrait, in oil, of Mr. Charles Francis Adams, by Robert W. Vonnoh (55689: loan).

ADAMS, ORR J., Grand Junction, Colo.: 2 fossil tree trunks impregnated with carnotite (57125: purchase).

ADELAIDE SILK MILLS, Allentown, Pa.: 6 specimens of tie silks (57127).

AGRICULTURE, DEPARTMENT OF:

Bureau of Animal Industry: Collection of wools and woolen products

AGRICULTURE, DEPARTMENT OF—Contd. illustrating methods of grading and manufacture, with suggested improvements in breeding and marketing raw wools (57073).

Bureau of Biological Survey: 3 living specimens of *Opuntia* collected by Mr. Stokley Ligon near Tularosa, N. Mex. (55647); 320 plants, including 19 living Cactaceae, collected in Arizona by Mr. E. A. Goldman (55647: 55803; 55829; 55835; 56389; 56731); plants principally from the southeastern part of the United States, collected by Mr. Ernest G. Holt (55697; 55710; 55966; 56983); plants from the southeastern part of the United States, Maryland and Maine, collected by Mr. W. L. McAtee (55803; 55966; 56708); 40 plants from Alabama, collected by Mr. A. H. Howell (55749; 57019); land shells from Alabama and Oregon, collected by Mr. Howell and Mr. L. J. Goldman (57070; 57093); 2 eggs of the western nighthawk, *Chordeiles virginianus henryi*, from Arizona (55844); 125 mammals from Patagonia (56067); 24 birds in alcohol, principally from Panama and Porto Rico (56169; 56178; 56952); 2 specimens of *Helicina* from Panama (56566); 8 plants collected in Arizona by Mr. Vernon Bailey (56265); 2 snakes, *Bascanion flaviventris*, and a salamander, *Ambystoma tigrinum*, from Utah (56291); 14 bird eggs from

AGRICULTURE, DEPARTMENT OF—Contd.

New Mexico and Alaska (56371); mounted ocelot, *Felis pardalis albescens* (56916).

Bureau of Entomology: 84 Diptera from the vicinity of Washington, collected by Mr. C. T. Greene (55678); 114 Coleoptera and 100 Hemiptera, determined by Mr. A. L. Montandon (55790; 55838; 56011); 66 insects collected by Mr. W. D. McLeod, Howkan, Alaska (56068); approximately 500 miscellaneous insects and 1,133 Diptera, from the vicinity of Washington, D. C., collected by Mr. R. C. Shannon (56129); 8 living specimens of Cactaceae from Arizona, collected by Mr. C. H. Popenoe (56141); about 300 insects collected in Arizona by Mr. W. D. Pierce (56142); about 1,500 insects, mostly Diptera, from Florida and the Bahama Islands, collected by Mr. F. Knab (56174); about 100,000 pinned specimens of insects and 1,000 tubes of insects in alcohol, accumulated by the force engaged in Investigations of Field Crops (56187); about 1,275 insects collected principally in California by Mr. J. R. Horton (56198); about 40 specimens of European weevils bred from alfalfa; also 79 named reared specimens of the genus *Aphytus* (including the types of 3 new species) from the material used by Mr. Timberlake for his revision of the genus (56506); 17 plants collected in Arizona by Mr. H. S. Barber (56571); sowbug, *Porcellio laevis*, collected in China by Mr. Frank N. Meyer (56637); 365 Diptera collected by Mr. W. R. Walton in New Mexico in 1913 (56662); 9 parasitic Hymenoptera (56690); 2 specimens of *Helix aspersa* from San Francisco, Cal., and 4 of *Lymnaea palustris* from Poughkeepsie, N. Y. (56758); type and 3 paratypes of *Leucopis floricornis* (56863); isopod, *Porcellionides pruinosus*, from Porto Colombia, Colombia, taken from orchids in quarantine at New York

AGRICULTURE, DEPARTMENT OF—Contd.

(56922); 13 specimens of isopods, *Porcellio spinicornis* and *P. laevis*, collected in Sacramento by Mr. E. O. Essig (57018).

Forest Service: A piece of creosoted wood attacked by *Limnoria*, *Sphaeroma* and *Xylotrya*, from St. Johns River, Fla., received through Mr. Clyde H. Teesdale, Madison, Wis. (56750); 2 living specimens of *Coryphantha* from South Dakota; and 2 living specimens of *Echinocereus* from Utah, collected by Mr. W. W. Eggleston (56981); 23 photographs of the turpentine and rosin industry (57096).

Bureau of Plant Industry: 775 plants collected in New Mexico, Arizona, Texas and California by Prof. E. O. Wooton (55668; 56192; 56627); 51 plants, chiefly from Texas, collected by Dr. David Griffiths (56627); 141 plants collected by Mrs. Agnes Chase in Texas, Louisiana and Porto Rico (55711; 56646; 56828); 16 plants collected in Turkestan and Siberia by Mr. F. N. Meyer (55711); 2 specimens of *Juncus* from Alabama (55748); 11 plants from Alabama and Louisiana (55895); 4 samples of tan barks collected in the Philippine Islands (55913); 58 plants from California collected by Mr. R. L. Piemeisel (55943; 55972; 56102); 34 specimens of Cyperaceae and Juncaceae, from Louisiana, Surinam and the island of Santa Lucia (55972; 56039; 56102); 1,500 plants collected in the western part of the United States by Mr. Albert E. Hitchcock; and a specimen of *Macrorozania moorei* from New Zealand (56268); 9 specimens of Cyperaceae collected in Porto Rico by Brother Hioram and transmitted by Prof. A. S. Hitchcock (56161); 90 specimens of wood from Panama, collected by Prof. H. Pittier during his connection with the Smithsonian Biological Survey of the Panama Canal Zone (56180); specimen of *Deiceya arguta* collected

AGRICULTURE, DEPARTMENT OF—Contd. near Aguanga, Cal., by Mr. Franklin Heald (56406); 6,000 specimens of grasses (56570); earthworms from near the Sherman statue, Washington, D. C. (56657); 4 specimens of *Scleria* collected in Cuba by Brother Leon (56674); 3 living specimens of *Opuntia* collected by Prof. C. V. Piper at Croton, Hernando County, Fla. (56730); 28 earthworms from the grounds of the Department of Agriculture (56558; 56759); specimen of *Circus* from Brazil (56774); 8 specimens of *Juncus* and *Grossularia* collected in Montana by Mr. Frederick V. Coville (56867); 61 plants from Guatemala (56882); 8 specimens of *Oenothera* collected by Mr. H. H. Bartlett (56891); 8 plants collected in Chile by Mr. J. D. Husbands (57022); 1,224 mounted specimens of grasses (57056); 2 photographs of flax, one in flower and the other of mature plants ready for the harvest (57097).

Office of Public Roads: A set consisting of 38 samples of typical road-building rocks, accompanied by physical and petrographic analyses (55716).

AGRICULTURE, DEPARTMENT OF, Suva, Fiji: 2 lizards, *Brachylophus*, from Fiji, received from Mr. Frank P. Tepson, government entomologist (56496).

AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND, DEPARTMENT OF (FISHERIES BRANCH). (See under Ireland.)

AGUIRRE, DR. RAFAEL TEJADA, Guatemala City, Guatemala: 158 plants from Guatemala (55764; 56189).

ALABAMA CONSOLIDATED COAL AND IRON COMPANY, Birmingham, Ala.: 72-hour foundry coke—one large specimen showing full depth of charge—received at the close of the Louisiana Purchase Exposition, 1904 (57122).

ALABAMA, GEOLOGICAL SURVEY OF, University, Ala.: 13 specimens of plants from Alabama, collected by Mr. Roland M. Harper (55766: exchange).

ALBERENE STONE COMPANY, New York City (through Mr. Chas. D. Harvey): A specimen of ilmenite from Albemarle, Albemarle County, Va. (56519).

ALDRIDGE, MISS MARY G., Auburndale, Mass. (through Mr. G. T. Aldridge, Washington, D. C.): 3 pieces of quilt made by Catherine Van Winkle (great-grandmother of the donor), of Bergen, N. J., between 1775 and 1780 (55825).

ALEXANDER, M., Asheville, N. C.: An exhibition specimen of monazite from Madison County, N. C. (56028: purchase).

ALEXANDRA PARK, Manchester, England (through Mr. Robert Lamb, superintendent): 112 living specimens of Cactaceae, including 18 specimens of *Epiphyllum*, 93 of *Rhipsalis* and 1 of *Pterocactus kuntzei* (55786; 56481; 56736; 56893). Exchange.

ALLEN, EDGAR, & CO., Sheffield, England: 28 specimens of iron alloys (56149).

AMATEIS, MRS. DORA B., West Falls Church, Va.: Portrait bust, in marble, of the sculptor's son, by Louis Amateis (56078: loan).

AMERICAN COLONIZATION SOCIETY, Washington, D. C. (through the Library of Congress): Specimens of west African woods and textile work of Liberian colonists, Liberian coins, shell money, a game, stamping machine, flags and flag-cloth, rocks and ores (55986).

AMERICAN CROSS-ARM COMPANY, Brooklyn, N. Y.: Douglas fir telegraph cross-arm from the original line of the Western Union Telegraph Company erected in 1869 between Cobre, Nev., and the Utah State line on the Southern Pacific Railroad (56299).

AMERICAN MUSEUM OF NATURAL HISTORY, New York City: 2 teeth of *Palaeomastodon* from the Fayum locality, Egypt (56109); 351 grams of the Deep Springs meteorite and 298 grams of the Hammond meteorite (56124); 2 specimens of *Apodemus peninsulae* and 2 specimens of *Eromys regulus*, from Potaidon, Korea (56656); casts of 3 specimens of fossil mammals from the later Tertiary (Pliocene?) of Nebraska (56728). Exchange.

AMERICAN NOVELTY PRINTING AND EMBOSsing WORKS, Hoboken, N. J.: 2 samples of warp-printed ribbons, a sample of hand-block printed fabric and a sample of embossed velvet (56726).

AMERICAN TYPE FOUNDERS COMPANY, Jersey City, N. J.: A Bruce type-casting machine of the earliest type extant and a hand mold with the matrix and type cast therein (56115).

AMERICAN VANADIUM COMPANY, Pittsburgh, Pa.: 5 samples of vanadium-bearing ores from Peru (56833).

AMICALOLA MARBLE COMPANY, Ball Ground, Ga. (through Mr. C. E. Stedman, Washington, D. C.): A large slab of marble (56058).

AMORY, COBLEY, sr., Walpole, N. H.: Skin of a trout, *Salvelinus marstoni?*, from a lake in Labrador (56062).

ANDERSON, MRS. ALEXANDRA KOCSSIS, Washington, D. C.: An ancient vase, representing mother and two children, from the Cuzeo region, Peru (57037: loan).

ANDERSON, J. A., Lambertville, N. J.: 3 photographs of fresh-water bryozoans (56012); photograph of a chipmunk, *Tamias striatus*, and of Washington's fishing tackle (56231).

ANDERSON, WERNER, Balboa, Canal Zone: 12 scavenger flies belonging to the family Phoridae (56485).

ANDRES, H., Bonn, Germany: 12 specimens of *Pyrola* from Europe (55767).

ANONYMOUS: An ancient brass, breech-loading cannon (55887).

ARMSTRONG CORK COMPANY, Lancaster, Pa.: A series of specimens and photographs illustrating the manufacture of linoleum (56498).

ARNOLD ARBORETUM, HARVARD UNIVERSITY, Jamaica Plain, Mass.: 34 specimens of pines, chiefly from Mexico (56304); 137 plants from the eastern part of the United States (56487). Exchange.

ARNOLD, B. W., Northeast Harbor, Me.: Specimen of shrubby red cedar, *Juniperus horizontalis*, from Maine (55691).

ARNOLD, EDWARD, Montreal, Canada: 15 eggs of the fulvous tree duck, *Dendrocygna bicolor*, and 4 eggs of the western solitary sandpiper, *Helodromas solitarius cinnamomeus* (55845: exchange).

ATWELL, JOS. W., Worton, Md.: Barred owl, *Strix varia*, from Maryland (56256).

BABBIDGE, MRS. F. E., San Diego, Cal.: A cannon sight from Morro Castle, obtained by a soldier of the U. S. Signal Corps (56544).

BAILEY, VERNON, U. S. Department of Agriculture, Washington, D. C.: Teeth and jaw fragments of a fossil mammal (56166).

BAIRD, MISS LUCY HUNTER (through Mr. Herbert A. Gill, executor, Washington, D. C.): Gold medal presented to Prof. Spencer F. Baird by the Department of Fishiculture of the Lower Seine, France, November 30, 1883; silver medal presented to Prof. Baird by the Acclimatization Society, New South Wales, July, 1878; bronze medal, International Exhibition, Philadelphia, 1876; guns and gun barrels; card of invitation to ceremonies and order of proceedings at the dedication of the Washington Monument, February 21, 1885 (55865); historical objects, including the Decoration of the Order of St. Olaf conferred by the King of

BAIRD, Miss LUCY HUNTER—Continued. Sweden and Norway upon Prof. Baird in recognition of his services to science; ethnological and archeological specimens, 26 water colors by Ernest Griset, fans, ceramics, bronzes, engravings, photographs and a metronome (57117). Bequest.

BAKER, A. B., Boston, Mass.: Skin of *Trichoglossus ornatus* (56420).

BAKER, Prof. CHARLES FULLER, College of Agriculture, University of the Philippines, Los Baños, P. I.: 7 plants, mainly fungi, from Luzon (55849); about 240 chalcids (56706).

BAKER, CHARLES H., Orlando, Fla.: 10 specimens of *Hicoria* from Florida (56979).

BAKER, D. T., Ancon, Canal Zone: Specimen of the fruit of a palm collected in Brazil (56776); fruit head of ivory nut palm, *Phytelephas*, from Panama (56825).

BAKER, Mrs. FRANK, Washington, D. C.: A cannon ball captured from a British vessel during the War of 1812-14, and the front leaf of the "Ellsworth American," published in Ellsworth, Me., December 17, 1868, containing an account of the relic (56177).

BAKER, Dr. FRED., Point Loma, Cal.: Skin of a lory, *Vini kuhli*, from Fanning Island (56399); invertebrates and fishes from the inner lagoon of Fanning Island (56489); fishes, reptiles, crustaceans, and a squid, from the Philippine Islands (57041: collected for the Museum).

BAKER, Dr. F. H., Richmond, Victoria, Australia: Mollusks and polyoza (55732: exchange); 2 specimens (2 species) of echinoderms, 9 specimens (4 species) of mollusks and 2 slides of odontophores of Chitons, from Australia (55768: exchange); 3 wasps and 2 beetles (55800); 6 beetles from Australia (56226: exchange); 3 specimens representing 3 species of bryozoans from Queenscliffe, Port Phillip Bay, Victoria (56472: exchange); starfishes, mol-

BAKER, Dr. F. H.—Continued. lusks and insects (56631: exchange); insects from Victoria (56685).

BAKER, HENRY D., American consul, Bombay, India (through The American Numismatic Society, New York City): 2 antique copper coins (55782).

BAKER, OSCAR, Washington, D. C.: Cardinal, *Cardinalis cardinalis*, from the District of Columbia (56193).

BALL, C. R., U. S. Department of Agriculture, Washington, D. C.: 125 plants, chiefly willows, from the United States (56274); 14 plants from New York (56676).

BALLAUF, D., Washington, D. C.: A collection of models of steamboat propellers made by Mr. Ballauf (56077: purchase).

BANCROFT, CHARLES A., Durand, Ill. (through Prof. F. W. Clarke): 2 specimens of native copper found in glacial drift (55947).

BANE, Miss SUDA L., Washington, D. C.: Bohemian "peachblow" vase and stand (56803: loan).

BANKS, NATHAN, Bureau of Entomology, Washington, D. C.: 4 specimens of *Andrena rehni* (56173).

BARBER, MANLY D., Knoxville, Tenn.: Sponge, *Chalina clathrata*, variety, from Borneo (56742).

BARCLAY, J. W., Washington, D. C.: A pair of flintlock pistols (57121: loan).

BARKER, Mrs. GEORGE F., Moylan, Pa.: The diploma of membership of Dr. George F. Barker in the American Philosophical Society, dated April 18, 1873 (55660).

BARNES, DR. WILLIAM, Decatur, Ill.: 10 cotypes of Microlepidoptera (56705).

BARR, Rev. DAVID, Washington, D. C.: A Moro kris (56018).

BARROWS, ALBERT L., University of California, Berkeley, Cal.: 4 specimens of *Epiphragmophora stearnsiana* (56336); 30 specimens of 2

BARROWS, ALBERT L.—Continued.
species of isopods with 2 rock borings (56978).

BARTAŠOV, Prof. A. V., Troickosavsk, Siberia: 21 Buriat skulls and 5 Mongolian skulls, from the vicinity of Kiakhta, Siberia (57107: collected for the Museum).

BARTLETT, H. H., U. S. Department of Agriculture, Washington, D. C.: 14 plants from the southeastern part of the United States (56709: exchange).

BARTLETT, W. P., Porterville, Cal. (through U. S. Geological Survey): Specimen of pure white magnesite from ore pile of Tulare Mining Company at Porterville (56412).

BARTON, ALEX., Columbia Furnace, Va.: Abnormal egg of a domestic fowl (56070).

BARTSCH, HENRY, Washington, D. C.: 8 crayfishes from Gap Run, Fauquier County, Va. (55794).

BAUER, Mrs. L. A., Washington, D. C., and Mrs. MARY B. DAWSON, Linden, Md.: 8 water-color studies of plants by Miss Adelia Gates (56111).

BEACH, H. D., Buffalo, N. Y. (through Mr. George W. Harris, Washington, D. C.): Photographic portrait of a lady (56588).

BEACH, WILFRED W., New York City: Specimen of luna moth (55948).

BEARSS, J. T., St. Cloud, Fla.: 2 living specimens of *Opuntia* from Florida (55649); 3 living specimens of *Opuntia* from Florida (56823: exchange).

BEAVER DAM MARBLE Co., Baltimore, Md.: 2 large slabs of Beaver Dam marble from Cockeysville, Md., received through Rulman & Wilson (56032); 2 slabs of Mar Villa marble (56723).

BECHDOLT, R. G., Seidersville, Pa.: 2 specimens of *Rhamnus* and one specimen of *Amaranthus blitoides*, from Pennsylvania (55812; 55949).

BELLEVUE, OHIO, CITY SCHOOLS (through Mr. E. F. Warner, superintendent): 21 specimens of calcite crystals and 4 specimens of invertebrate fossils (56266: exchange).

BEMENT, CLARENCE S., Philadelphia, Pa. (through Prof. F. W. Clarke): 6 specimens of minerals (56797).

BENEDICT, DR. J. E., U. S. National Museum: Turtle from Connecticut (55976).

BENEDICT, JAMES E., jr., Silver Spring, Md.: Red-tailed hawk, *Buteo borealis* (56251).

BENNER, W. G., Hanover, Va.: Vertebra of a cetacean and tooth of a shark (56740).

BENT, A. C., Taunton, Mass.: 6 bird skins from Guadalupe Island, Lower California (56834).

BENTON, G. W., Brownwood, Tex.: 2 specimens of celestite (56444).

BERLIN (DAHLEM BEI STEGLITZ), GERMANY, KÖNIGL. BOTANISCHER GARTEN UND BOTANISCHES MUSEUM: Fragment of the type of *Lycopodium nitens* (56735); 6 specimens of *Lycopodium* from tropical America (56875); 200 specimens of grasses, chiefly from Africa (56890). Exchange.

BERLIN, GERMANY, KÖNIGL. ZOOLOGISCHE MUSEUM: 36 specimens, representing 16 species, of ascidians (56260: exchange); 24 parasitic Hymenoptera, including 8 paratypes of species described by Mr. H. L. Viebeck in the Proceedings of the U. S. National Museum, Vol. 46 (56555).

BERNHEIMER, JACOB S., & BRO., New York City: 3 2-yard lengths of a printed cotton fabric, Tong King Grosgrain (56702).

BERRY, S. S., Redlands, Cal.: 162 specimens, representing 11 species, of land, fresh-water and marine shells, including a paratype of *Mopalia thunnopora*, from California, Montana and Maine (56426); 6 specimens of *Vitrea alliaria* from Red-

BERRY, S. S.—Continued.
lands, a European species accidentally introduced into California (56452).

BEUTENMÜLLER, WILLIAM, New York City: 4 specimens of *Rhamphomyia novecarolina*, including 2 paratypes (56553).

BIDDLE, Miss CHRISTINE W., Philadelphia, Pa.: Silver filigree bonbon basket, Florentine (57109).

BIDDLE, Col. JOHN, U. S. Army, War Department, Washington, D. C. (through Miss Susan D. Biddle): Portrait in oil, by Thomas Sully, of Maj. John Biddle, U. S. Army (56998: loan).

BIDDLE, Miss SUSAN D., Detroit, Mich.: Portrait in oil, by Thomas Sully, of Eliza Bradish Biddle, wife of Maj. John Biddle, U. S. Army (56997: loan).

BIGGS, Mrs. NORTON, Thomasville, Ga.: Specimen of *Lygodium* from Georgia (56441).

BILL LEAF, Tama, Iowa (through Dr. Truman Michelson): Sacred bundle of the Fox Indians (55860: purchase).

BIRD, HENRY, Rye, N. Y.: 4 insects (a pair of *Papaipema speciosissima* and a paratype of *P. lysimachia* and *P. purpurifascia*) (56175).

BLACKFORD, J. M., Delavan, Wis.: A net for catching passenger pigeons (56548).

BLACKISTON, A. H., Cumberland, Md.: 9 terra cotta vases and figurines from Oaxaca, Mexico (55817); collection of archeological specimens from Hacienda Coacoyolitos, Delta of the Rosario River, Sinaloa and Oaxaca (55857); 8 copper ceremonial objects from Oaxaca (55873). Loan.

BLISS, FABYAN & COMPANY, Boston, Mass.: 5 2-yard cuts of Ripplette (56855).

BLOW, H. L., Tuckerton, N. J.: Specimens of mantis, *Paratenodera sinensis* (56010).

BODKIN, G. E., Government economic biologist, Georgetown, British Guiana: About 200 specimens of parasitic Hymenoptera (56261). (See under Georgetown, British Guiana.)

BOLLMAN, H. C. (See under Paul C. Standley.)

BONAPARTE, PRINCE ROLAND, HERBARIUM OF, Paris, France (through Mr. C. Belharte): 111 ferns and 4 photographs of *Gleichenia compacta* (55898: exchange); 203 plants from Mexico (55898: 55944); 100 ferns from tropical America (55944: exchange); 2 specimens and 4 photographs of *Lycopodium* (56745: exchange).

BOONE, Miss PEARL L., U. S. Department of Agriculture, Washington, D. C.: Land shells representing 5 species from Hyattsville, Md., and Northumberland County, Va. (56104); about 100 specimens of land and marine mollusks from the west side of Chesapeake Bay at Fleeton, Northumberland County (56288); crayfish from Rosslyn, Va. (56346); 2 snakes from Rock Creek Park, D. C. (56456); bat, *Pipistrellus subflavus*, from Hyattsville (56818).

BOOTH, Miss M. A., Springfield, Mass.: 11 photographs of parasites (55824); hawkeye camera (55842).

BOSTON SOCIETY OF NATURAL HISTORY, Boston, Mass.: 2 Diptera (55672).

BOTANIC GARDENS. (See under Sydney, New South Wales, Australia.)

BÖVING, DR. ADAM GIEDE, Bureau of Entomology, Washington, D. C.: 11 vials of immature Coleoptera from the vicinity of the District of Columbia (56507).

BOWER, Prof. F. O., University of Glasgow, Glasgow, Scotland: Specimen of *Matteuccia intermedia* from India (56531).

BOYD, B. F., Washington, D. C.: Snake (56809).

BOYD, DR. NATHAN, Washington, D. C.: 2 paintings in oil—Portrait of Beatrice Cenci, by G. Mazzolini, and a copy of Titian's portrait of his daughter, unsigned (56279: loan).

BOYNTON, MISS ALICE M., Nassau, Bahamas: 13 specimens, representing 12 species, of corals (56383).

BRADLEY, CYRUS SHERWOOD, Southport, Conn.: 4 specimens of weathered igneous rocks (57120).

BRADLEY, WILLIAM, & SON, Long Island City, N. Y.: 2 large slabs of marble from Carthage, Mo. (56030).

BRAECKLEIN, J. G., Kansas City, Mo.: 145 stone implements from Missouri (56410); 198 small arrowpoints, 24 flint scrapers, 77 flint blades of various types and a bannerstone, mostly from Missouri (57059: exchange).

BRANDEGEE, T. S., University of California, Berkeley, Cal.: 88 ferns collected in Mexico by Dr. C. A. Purpus (55846; 56599; 56629); 480 plants collected in Mexico by Dr. Purpus (57135: purchase).

BRASSEUR, CHARLES L., Orange, N. J.: Photographic processes by Mr. Brasleur (56294: loan).

BRAUCKMAN, CORNELIUS, Los Angeles, Cal.: 4 specimens of Grand Feu art pottery (55899).

BRESLAU, GERMANY, MUSEUM, GEOLOGISCHES INSTITUT DER UNIVERSITÄT BRESLAU: 260 specimens, representing 68 species, of Upper Carboniferous fossils from India (Salt Range) (57039: exchange).

BRIDWELL, JOHN COLBURN, Honolulu, Hawaii: Crustaceans from Honolulu (57063).

BRIMLEY, C. S., Raleigh, N. C.: 2 specimens of *Norops auratus* and a specimen each of *Mabuya agilis* and *Gonatodes fuscus* (55991); 7 turtles from Georgia and North Carolina (56789); 7 turtles, *Pseudemys scripta* (56837). Purchase.

BRINKMAN, A. H., Dowling Lake, Alberta, Canada: 20 specimens of Canadian hepaticae (56182: purchase).

BRINTON, MRS. EMMA S., Washington, D. C.: 19 pieces of Norwegian bridal jewelry, a silver Armenian bracelet, and a pair of cuff buttons consisting of Roman coins mounted in Germany (56904: purchase).

BRISBANE, QUEENSLAND, QUEENSLAND MUSEUM (through Prof. R. Hamlyn-Harris, director): 2 specimens of *Sympcipatus oviparus* (55853); 2 specimens of *Peripatoides oviparus* (56934).

BRISTOW, JOSEPH Q., Washington, D. C.: 4 framed engravings (55778: loan); a 2-color halftone relief (55779).

BRITISH MUSEUM (NATURAL HISTORY). (See under London, England.)

BROADWAY, W. E., Scarborough, Tobago, West Indies: 120 miscellaneous plants from Tobago and Trinidad (55850; 55987; 56021; 56217; 56359; 56829; 56894; 57021); 25 ferns mainly from Grenada (56217); 2 cactus specimens and a photograph (56773); 200 miscellaneous plants from Tobago (55959; 55979; 56021: purchase).

BROCKUNIER, S. H., Nevada City, Cal. (through Mr. Frank L. Hess, U. S. Geological Survey): 2 specimens of ferberite with chrysocolla and copper tungstate in pegmatite (56695).

BROOKLYN INSTITUTE OF ARTS AND SCIENCES, CENTRAL MUSEUM OF, Brooklyn, N. Y. (through Mr. Robert Cushman Murphy): Marine mollusks representing 7 species from South Georgia, Antarctic Islands (56046); 23 specimens, representing 9 species, of crustaceans from South Georgia (56411); lizard, *Tarentola delalandii*, from Cape Verde Islands (56443); 4 specimens of a copepod, *Pandarus satyrus* (56687).

BROUARD, ARSENIO, Querétaro, Mexico: 43 living plants, mostly Cactaceae, from Mexico (56511; 56870).

BROWN, CHARLES, and JOHN PEARSON, Dent, Idaho (through Mr. W. B. Compton): Incrustation of vivianite crystals from gold placer mines in Clearwater County, Idaho (56035).

BROWN, EDGAR, U. S. Department of Agriculture, Washington, D. C.: Specimen of red-eyed vireo, *Vireo-sylvia olivacea*, from Plummer's Island, Va. (57012).

BROWN, EDWARD J., U. S. National Museum: Specimen of ring-necked duck, *Marila collaris*, from the Potomac Flats, D. C. (56005); specimens of *Polygyra* from Rock Creek Park, D. C. (56106); 3 salamanders from Virginia (56233).

BRYAN, Maj. HARRY S., Mexico, Mexico: Archeological and ethnological objects from Mexico (55831; 55900). Loan.

BRYAN, WILLIAM A., Honolulu, Hawaii: Shrimp, *Crangon laevis*, and an isopod, *Nerocila australasiae* (56322).

BRYANT, THOMAS H., Cincinnati, Ohio: 5 cases of shells from various localities, being the collection of the late Prof. Frank W. Bryant of Lakeside, Cal. (55981).

BÜES, C., and Mr. SCHMITT, Tirapata, Peru, via Mollendo: Fresh-water shells from Juli, Lake Titicaca, and from a lake on hacienda Sapaputjio, draining through Ramis River into Lake Titicaca, 14,000 feet elevation (56862).

BURDEN, Mrs. C. E., Falls Church, Va.: About 10,000 specimens of Coleoptera (55724: purchase).

BURNHAM, Dr. N. S., Miami, Fla.: Crab, *Libinia erinacea* (56315).

BURNSIDE, BRADFORD, Hyattsville, Md.: Spider (55805).

BUSH-BROWN, H. K., Washington, D. C.: Plaster cast, heroic size, of H. K. Bush-Brown's bust of Lincoln, the bronze of which has been erected at Gettysburg (56168: loan).

BUSHNELL, MTS. BELLE, Charlottesville, Va.: A Chinese embroidered crêpe shawl and a bronze statue of Buddha (56341).

BUSHNELL, D. I., jr., Charlottesville, Va.: Quiver and bow case (Osage?) 75 years old, from St. Genevieve, Mo. (55681); notched stone ax found one mile northeast of Stuarts Draft, one-half mile west of the South Fork of the Shenandoah River, Augusta County, Va. (56095); 25 archeological objects from Missouri, Illinois, Tennessee and Arizona (56345: purchase).

BUTMAN, CARL H., Smithsonian Institution: 9 specimens of rotary intaglio, rotogravure, etc. (57098).

CALCUTTA, INDIA, INDIAN MUSEUM: Shrimp, *Typhlocaris galilea*, from Lake Tiberias, Palestine (55926); 2 specimens of crab, *Carcinoplax longipes* (56367). Exchange.

CALCUTTA (SIBPUR, near), INDIA, ROYAL BOTANIC GARDEN: 16 plants from India (56632: exchange).

CALIFORNIA ACADEMY OF SCIENCES, San Francisco, Cal.: Lizard, *Sceloporus elongatus*, from Utah (56510); 180 plants from California (56601: exchange); Tertiary fossils, mostly paratypes, representing 18 species from California (56865).

CALIFORNIA, UNIVERSITY OF, MUSEUM OF VERTEBRATE ZOOLOGY, Berkeley, Cal.: Isopod crustaceans, *Alloniscus mirabilis*, from San Diego Bay (56024).

CAMBRIDGE, MASS., MUSEUM OF COMPARATIVE ZOOLOGY: 40 bird skins from China (56308); lizard, *Brachylophus fasciatus*, from Fiji, and 2 frogs, *Astylosternus robustus*, from Kamerun (57113). Exchange.

CAMPBELL, MRS. CHARLES H., Washington, D. C.: Wedding dress of Mrs. Porter, wife of Admiral D. D. Porter, U. S. Navy (57060: loan).

CAMPBELL, E. F., Washington, D. C.: 26 specimens, representing 9 species, of marine shells from Cape Lookout, N. C., and James River, Va. (56761).

CARNEGIE INSTITUTION OF WASHINGTON: 19 living specimens of Cactaceae, consisting of 12 specimens of *Mamillaria* and 7 specimens of *Coryphantha similis*, collected by Prof. A. Ruth in Texas (55648; 56883); 2 living specimens of Cactaceae collected near Flagstaff, Ariz., by Dr. Forrest Shreve (55718); about 2,000 plants, including Cactaceae, from Colorado, New Mexico and Texas, collected by Dr. J. N. Rose and Mr. William R. Fitch (56092); 22 plant specimens from Colombia, South America, received from Mr. John G. Sinclair (56871); 5 specimens of *Dudleya parishii* from Lebec, Cal., collected by Dr. D. T. MacDougal (56989).

CARNEGIE INSTITUTION OF WASHINGTON and U. S. GEOLOGICAL SURVEY, Washington, D. C.: 16 cases of rocks, fossil wood, recent land mollusks and recent corals, from the Leeward and Virgin Islands, West Indies, collected by Dr. T. Wayland Vaughan (56807).

CARNEGIE MUSEUM, Pittsburgh, Pa.: 1 living specimen of Cactaceae collected on the Isle of Pines by Mr. G. A. Link (56181).

CARR, W. P., Deadwood, S. Dak.: 50 plants from South Dakota (55809: purchase); 134 plants from South Dakota (56422).

CARTER, JOSEPH C., U. S. Department of Agriculture, Washington, D. C.: An etching, "Cedars in Moonlight," by James D. Smillie (56779).

CARTER, N. E., Elkhorn, Wis.: 16 specimens made in imitation of prehistoric implements (55677; 55757; 56464).

CASE, DR. E. C., University of Michigan, Ann Arbor, Mich.: The type specimen of *Crossotolos annulatus* (56659: exchange).

CASH, MISS LILIAN C., U. S. National Museum: Meduse and Amphipods from Plum Point, Md. (55674); frog from Maryland (55910).

CASSELLA COLOR COMPANY, New York City: Collection of coal distillation products and dyestuffs illustrating the artificial color industry (57025).

CAWSTON OSTRICH FARM, South Pasadena, Cal.: Egg of Nubian ostrich, *Struthio camelus* (55684).

CENTRAL MUSEUM OF THE BROOKLYN INSTITUTE OF ARTS AND SCIENCES. (See under Brooklyn.)

CHASE, MRS. E. P., Los Angeles, Cal.: Specimens of neponic young of *Petricola* from North Santa Monica, Cal. (56158).

CHAGNON, W., St. Johns, Quebec, Canada: 8 specimens of Lepidoptera (56693).

CHALMERS, R. BUDD, Germantown, Pa.: 27 specimens of sponge, *Tetilla gravata* (56688).

CHAMBERLAIN, C. E., Bethlehem, Pa.: Specimen of *Limax maximus* (56022).

CHAMBERLAIN, E. B., New York City: 2 mosses from Italy and a specimen from Ceylon (56234; 56379).

CHAMBERS, B. L., U. S. National Museum: Specimen of barred owl, *Strix varia*, from Rockville, Md. (56332).

CHAMPLAIN, A. B., Harrisburg, Pa.: 23 specimens of Hymenoptera (55839).

CHANDLER, WALTER MARK, Washington, D. C.: 50 mineral specimens (56744: exchange); specimen of malachite from northern Rhodesia, and a boulder from Roberts Victor Diamond Mine, Orange River Colony, South Africa (56974).

CHANDONNET, REV. Z. L., Perham, Minn.: 9 specimens of *Laciniaria* from Minnesota (55950).

CHARLESTON MUSEUM, Charleston, S. C. (through Dr. D. S. Martin): 11 specimens of minerals (56752).

CHENEY BROTHERS, South Manchester, Conn.: Grant silk reel and skeins of yarn showing methods of winding; specimens showing the processes used in weaving, printing and finishing silk goods; silk scarfs and ribbons (56298).

CHESTER GRANITE AND POLISHING WORKS, Chester, Mass.: A 5-inch cube of granite (55737).

CHILDS, L. J., Rialto, Cal.: Specimen of Wilkeite from Crestmore, Cal. (56699).

CHRISTOPHERSON, EDMUND D., Empire, Canal Zone: 39 specimens of Panama woods collected by Mr. Christopherson (56179: purchase).

CHUBBUCK, LEVI, Washington, D. C.: Sacred bison skull (55915).

CLAPP, WILLIAM F., Museum of Comparative Zoölogy, Cambridge, Mass.: Mollusks from Massachusetts, representing 2 species (56810).

CLARK, AUSTIN H., U. S. National Museum: Skin of *Marmosa* and skin of *Dasyphus*, from Tobago (55958); 40 mammal skins and 63 bird skins, from various localities (56885); type specimen of *Peripatus (Epiperipatus) trinidadensis broadwayi* from Tobago (56935).

CLARK, B. PRESTON, Boston, Mass.: 50 specimens of Sphingidae from Real del Monte, Hidalgo, Mexico (56542); about 150 Lepidoptera and other insects from Mexico and 75 butterflies from Banff, Alberta, Canada (56630); small collection of Lepidoptera (56987: gift and exchange).

CLARK, FRANK SCOTT, Detroit, Mich. (through Mr. George W. Harris, Washington, D. C.): Photographic portrait group "The Greek Temple Dance" (56589).

CLARK, DR. G. HARDY, Waterloo, Iowa: An anatomical specimen (56919).

CLARK, JAMES L., New York City: Kudu skull and skull of a sable antelope (55745); roan antelope skull, *Ozanna equina langheldi*, from British East Africa (56681: exchange); skull of topi, *Damaliscus*, and 1 of waterbuck, *Kobus*, from British East Africa (56813); 18 antelope skulls—9 *Ozanna*, 1 *Annetaphus*, 2 *Cobus vardoni*, 2 *Adenota cob*, 1 *Damaliscus* and 3 *Tragelaphus*, all from British East Africa and North-West Rhodesia (57017: exchange); 6 African antelope skulls—2 *Onotragus*, 2 *Taurotragus*, 1 *Oryx* and 1 *Adenota* (57053: exchange).

CLARK, Miss MAY S., Bureau of American Ethnology: A Navaho blanket (57061: purchase).

CLARKE, Prof. F. W., U. S. Geological Survey, Washington, D. C.: 237 photographs of snow crystals (56037).

CLARKE, Mrs. F. W., Washington, D. C.: A locket containing a picture of "Peace," period of 1812 (56525); a carved tortoise-shell backcomb (56582). Loan.

CLEMENTS, E. F., U. S. National Museum: Specimen of black-poll warbler, *Dendroica striata* (55978).

CLOUGH, L., East Concord, N. H.: Samples of lithiophilite (56993).

COCKERELL, Prof. T. D. A., University of Colorado, Boulder, Colo.: 135 miscellaneous insects (55759: 55870; 56052); 29 insects of which 12 named specimens belonging to 10 species (3 species represented by cotypes) are North American bees, and 10 named specimens belonging to 9 species (2 species represented by cotypes) are Australian bees new to the Museum collections (55927); 9 insects, including the type of *Cerceris angularis* (56135); type of *Veronicella mexicana betheli*; type of *Philomyicus costaricensis* and one slide; cotypes of *Oreohelix haydeni betheli*, *O. haydeni* var. *alta*, and *O. hendersoni dakani*; 2 slides of *Agriolimax guatemalensis montaguensis* from Panama and Glenwood Springs, Colo. (56163); 4 specimens of *Oroperipatus corradoi*.

COCKERELL, Prof. T. D. A.—Continued. (56447); 11 plants from Colorado and New Mexico (56514; 56573); 20 specimens of named bees, including 6 cotypes and 4 species, mostly from New South Wales (56564); 4 specimens of *Oroperipatus corradoi* collected at Ancon, Canal Zone, by Mr. J. Zetek (56936); 9 unnamed insects and 5 types (3 of Hymenoptera, 1 of Diptera, and 1 of Homoptera) (56971).

CODWISE, Miss LOUISE SALTER, Kingston, N. Y.: A needlebook, said to have been owned by Pocahontas, presented to the donor by the Countess Maria Conavarro, one of the descendants of the Indian princess (56002); watch, apparently of English make (56043).

COGGIN, W. M. (through Dr. Thomas N. White, Franklin, Va.): Florida cormorant, *Phalacrocorax auritus floridanus*, from Virginia (56902).

COLLINS, FRANK S., North Eastham, Mass.: 50 specimens of algae, *Phycotheca Boreali-Americana*, Fascicle XXXIX (56889: purchase).

COLORADO AGRICULTURAL COLLEGE, Fort Collins, Colo. (through Prof. C. P. Gillette): Types of 12 species and a paratype of an additional species of *Andrena* (56270: exchange).

COLORADO COLLEGE, MUSEUM OF, Colorado Springs, Colo. (through Mr. E. R. Warren, director): The type of *Nemorhodus palmeri* and both femora and lower jaw of *Marmota* sp. (56741: loan).

COLORADO MUSEUM OF NATURAL HISTORY, Denver, Colo.: 2 pairs of Gambel's quail, *Lophortyx gambeli*, from Colorado (56992).

COLORADO, UNIVERSITY OF, Boulder, Colo.: 115 specimens of monzonite (56337: exchange).

COLORADO-YULE MARBLE COMPANY, Marble, Colo.: A table made of Colorado-Yule marble and a large slab of this marble (55932; 56112).

COMBS, CLARK W., Washington, D. C.: Silver holder for cockade, War of 1812; china plate from flagship *St. Lawrence*, Battle of Lake Erie, War of 1812; and a purse of green and gold beads (57035: loan).

COMMERCE, DEPARTMENT OF:

Bureau of Fisheries: Collections of mollusks and plants, from the vicinity of Nushagak, Alaska, collected by Mr. G. Dallas Hanna and Mr. C. J. Roach (55670); about 100 starfishes, comprising 13 species and varieties, from the expeditions to Samoa, the northwest Pacific and the Philippine Islands, received through Dr. Walter K. Fisher (55741); 5 vials of crustaceans from Letnik Lake, Afognak Island, Alaska (55795); 162 lots of named ascidians, including types of 8 new species, and 48 lots of miscellaneous invertebrates, from the Philippine expedition of the *Albatross*, 1907-1910 (56066); mammals, reptiles, fishes, insects, mollusks and other invertebrates and algae, from Lake Maxinkuckee and other points in the northern part of Indiana, collected by Dr. B. W. Evermann and Mr. H. Walton Clark (56206); foraminifera collected by the *Albatross* and reported on by Prof. F. E. Schulze in Bulletin of the Museum of Comparative Zoölogy, Volume 51, No. 6 (56258); collection of fishes made by Prof. George Wagner in Minnesota during the summer of 1911 (56278); type specimen of a distome, *Parorchis avitus*, from a herring gull, Woods Hole, Mass., described by Dr. Edwin Linton (56285); 56 fishes collected in Japan and California, and 59 batrachians and reptiles collected in California and Nevada, through Dr. J. O. Snyder (56326); toads, a shell and a slug, from Alaska, collected principally by Mr. Ernest P. Walker (56340); reptiles and batrachians from North Carolina, collected by Mr. B. Schwartz (56349); plankton

COMMERCE, DEPARTMENT OF—Contd.
 and invertebrates, reptiles, turtle eggs, insects, mollusks and plants, from Indiana (56366; 56390); 49 bird eggs from Alaska, collected by Mr. G. Dallas Hanna (56417); collections from the north Atlantic coast of the United States by the schooner *Grampus* during 1913, under the direction of Dr. H. B. Bigelow, including pteropods, cephalopods and other mollusks, Salpæ, amphipods, hydrozoans, etc. The material in several of these groups had been studied and classified by Dr. Bigelow and Mr. W. E. Clapp (56435; 56490; 56569; 56751); 9 specimens of *Peneus setiferus* and 2 specimens of *Chloridella empusa*, from Louisiana, collected by the Conservation Commission (56473); fishes from California, Oregon and Nevada and from the *Albatross* expedition of 1906, received through Dr. J. O. Snyder (56483); 7 specimens of *Rangia flexuosa* from Vermilion Bay, La., collected by Mr. E. A. McIlhenny (56492); skin and skull of a deer, *Odocoileus*, from Wrangell Narrows, Alaska, collected by Mr. Ernest P. Walker (55606); the first series of a collection of schizophods taken by the schooner *Grampus* during the summer of 1912 and identified by Dr. H. J. Hansen (56762); 3 specimens representing 3 species of isopods (56880); fur-seal teeth, a shrew, a bird, reptiles and batrachians, fishes, invertebrates including insects and mollusks, and plants (56911); myctophids (lantern fishes) from the South Pacific (56923); 131 specimens of fresh-water mussels from various points in the United States (56961); specimens of the species of pearl shells from the Mississippi Valley which are used for the manufacture of buttons (57004); type specimens of fishes collected by the *Albatross* in the North Pacific in 1904 and described by Dr. C. H. Gilbert (57104); 30 mammals, including

COMMERCE, DEPARTMENT OF—Contd.
 types of 10 species described by Dr. C. H. Townsend, collected by the *Albatross* in Lower California and received through the American Museum of Natural History (57112).
Bureau of Foreign and Domestic Commerce: 5 samples of gum and resins collected in the market of Aden, British Arabia, by the American consul, Walter H. Schulz (56352).

CONGRESS, LIBRARY OF. (See under American Colonization Society.)

CONSERVATION COMMISSION, Albany, N. Y. (through Dr. Tarleton H. Bean): Specimens of *Hydra fusca* from the Adirondack State fish hatchery (55982; 56209).

CONSOLIDATION COAL COMPANY, Fairmont, W. Va.: A model plant showing, on the scale of one inch to the foot, a West Virginia coal district—miner's village, with mine trackage, coal tipple, washery and coke plant; the machinery is all in actual working parts. Received at the close of the Louisiana Purchase Exposition, 1904 (55791).

CONZATTI, Dr. C., Oaxaca de Juarez, Oaxaca, Mexico: 11 living specimens of Cactaceae from Mexico (56138; 56360; 56869); 8 living specimens of Cactaceae from Mexico (56529: exchange).

COPENHAGEN, DENMARK, UNIVERSITETETS ZOOLOGISKE MUSEUM: A small collection of stone implements, shells and bone fragments found in Danish and Icelandic refuse-heaps (kitchen middens) (56760: exchange).

COPPER BOTTOM MINING AND MILLING COMPANY, Careyhurst, Wyo.: 2 teeth and 2 vertebrae of *Elephas* (56926).

CORDAY AND GROSS COMPANY, Cleveland, Ohio: 22 examples of offset printing in color (13 duplicates), representing the work of the firm (55706).

CORE, E. B., New York City (through Mr. George W. Harris, Washington, D. C.): Photographic portrait group of children (56591).

COSMOS CLUB, Washington, D. C.: Antlers of Arizona wapiti, *Cervus merriami* (55889: exchange).

CRAMER, A. L., Colby, Wis.: Star-nosed mole, *Condylura cristata*, from Colby (56578).

CRAMER, G., St. Louis, Mo.: Photograph of the donor (57131).

CRAMPTON, Dr. C. C., Kankakee, Ill.: 220 plants from Illinois (56403).

CRANMER, Miss FRANCES, Bronxville, N. Y. (through Mr. Clarence C. Moore, Washington, D. C.): 2 oil paintings by Frances Cranmer—A Chippewa Indian chief and an aged Chippewa woman (56309: loan).

CRIKELAIR, R., Los Angeles, Cal.: Trap-door spider and nest (55798).

CROSS, Dr., Cross, Okla.: 26 specimens of aragonite (55717).

CURTIS, Mrs. WILLIAM ELROY, Washington, D. C.: 215 specimens, including material in ethnology, archaeology and history, brought together by the late William Elroy Curtis (56080: loan).

CUSHMAN, Mrs. ALLERTON S., Washington, D. C.: 2 costumes of Charlotte S. Cushman used in the impersonation, respectively, of Catharine and Cardinal Wolsey in Henry VIII (56918; 57001). Loan.

CUSTER, Mrs. ELIZABETH B., Bronxville, N. Y.: Photograph of Maj. Gen. George A. Custer and a description of the photograph written by Mrs. Custer (55864).

DAECKE, E., Harrisburg, Pa.: 14 specimens of Diptera, representing 7 species (55922).

DAHLEM BEI STEGLITZ, KÖNIGL. BOTANISCHER GARTEN UND BOTANISCHES MUSEUM. (See under Berlin, Germany.)

DALL, Dr. WILLIAM H., U. S. Geological Survey, Washington, D. C.: 2 photographs of natives of India, and 45 paintings on mica representing occupations of India (55676); nest of slate-colored *Junco*, *Junco hyemalis*, from Mt. Monadnock, N. H. (55758); 2 photographs of *Sarracenia* (56236).

DANDRIDGE, Miss SERENA K., Washington, D. C.: Fishes collected at South Harpswell, Me., in 1913 (56429).

DAVENPORT, Commodore R. G., U. S. Navy (retired), Washington, D. C.: A camel's hair shawl of the period 1820-1840 (56636).

DAVIDSON, Dr. A., Los Angeles, Cal.: Specimen of *Navarretia* from California (55960); 27 specimens of Chenopodiaceae and Allioniaceae, chiefly from California (56188).

DAVIES, GEORGE W., Topaz, Cal. (through U. S. Geological Survey): Specimen of greenockite from Topaz (56361).

DAVIS, Dr. S. AUSTIN, Brooklyn, N. Y.: Isopod, *Ceratothoa impressa*, parasitic on a flying-fish (56033).

DAWSON, Mrs. MARY B. (See under Mrs. L. A. Bauer.)

DEAM, CHARLES C., Bluffton, Ind.: 189 plants from Florida, Indiana and Guatemala (56663: exchange).

DEEKENS, Dr. W. F., Staunton, Va.: Tooth of an extinct species of horse (56065).

DE LAVAL SEPARATOR COMPANY, New York City: 2 De Laval cream separators (56432: loan).

DELAWARE COLLEGE AGRICULTURAL EXPERIMENT STATION, Newark, Del. (through Mr. J. J. Taubenthal): Type material of *Sclerotium bataticola* (56941).

DENSMORE, Miss FRANCES, Red Wing, Minn.: Collection of Sioux Indian ethnological objects (56292: loan); a cooking outfit used by the Sioux Indians in boiling meat without a kettle (56395: purchase); 9 eth-

DENSMORE, Miss FRANCES—Continued. Ethnological specimens of the Chippewa Indians (56905: purchase).

DERICKSON, Prof. S. HOFFMAN, Lebanon Valley College, Annville, Pa.: 2 ferns from Jamaica (56831).

DESERET MUSEUM, Salt Lake City, Utah: 14 mineral specimens from Bingham, Utah (56650: exchange).

DEVOE, F. W., & C. T. RAYNOLDS Co., New York City: A collection of artists' materials, numbering 160 articles (55841).

DEWEY, Mrs. GEORGE, Washington, D. C.: Wedding gown of Mrs. Dewey and an evening gown belonging to her (56903: loan).

DICKERSON, D. S., Carson City, Nev.: Skeleton of a rock wren, *Salpinctes obsoletus*, from Nevada (56756).

DICKERSON, EDGAR L., Nutley, N. J.: 3 specimens of Lepidoptera (56692).

DISBROW, Dr. W. S., Newark, N. J.: Zeolite from West Paterson, N. J. (56697: exchange).

DISTRICT OF COLUMBIA PAPER MANUFACTURING COMPANY, Washington, D. C.: Specimens illustrating 20 varieties of paper manufactured by the donor (55886).

DOHERTY & WADSWORTH COMPANY, New York City: 2 2-yard lengths of printed mikado crêpe (56856).

DOWLING, Dr. THOMAS, Washington, D. C.: Car-coupling link and a specimen of T-rail (56195: loan).

DRAKE, CARL J., Columbus, Ohio: Isopods from Cedar Point, Ohio (56042).

DUDELEY, PERIEN S., Buckfield, Me. (through Mr. Frank L. Hess, U. S. Geological Survey): Specimen of pollucite from Buckfield (55729).

DUFFIELD, MORSE S. (See under Charles H. Hussey.).

DULUTH CHAMBER OF COMMERCE, Duluth, Minn.: Model of Fayal iron ore mine, Eveleth, Minn., received at the close of the Louisiana Purchase Exposition, 1904 (57115).

DÜMMER, A. R., Kipayo, Uganda, British East Africa: 200 plants from Uganda (56707: purchase).

DUPLAN SILK COMPANY, New York City: 6 2-yard lengths of surface-printed broad silks, woven, printed and finished in America from designs executed in Paris, in the Martine School of Decorative Art under the direction of Paul Poiret (56671).

EAGLE AND PHENIX MILLS, Columbus, Ga.: 16 2-yard lengths of yarn-dyed cotton fabrics in finished and unfinished state (56615).

EARNSHAW KNITTING COMPANY, Inc., Chicago, Ill.: A series of specimens illustrating successive stages in the knitting, cutting and finishing of infants' underwear (57138).

EARNSHAW, WALTER, Anacostia, D. C.: Fungus from the District of Columbia (56976).

EASTHAM, J. W., Central Experiment Farm, Ottawa, Canada: 24 specimens of Myxomycetes from Canada (56512: exchange).

EASTMAN, GEORGE, Rochester, N. Y.: Photograph of the donor (57132).

EASTMAN KODAK COMPANY, Rochester, N. Y.: Collection of photographic apparatus and prints (15 specimens) (57089).

EGBERT, DR. J. HOBART, Superintendent, Medical Department, United Fruit Company, Santa Marta, Colombia: 90 miscellaneous insects, including mosquitoes and Psychodidae (55679; 55771).

EGGLESTON, W. W., U. S. Department of Agriculture, Washington, D. C.: 20 specimens of *Crataegus* from Indiana (56513).

Egypt EXPLORATION FUND, London, England (through Mr. S. W. Woodward, Washington, D. C.): 8 specimens of antiquities from Abydos (55827).

ELLIS, Miss CHARLOTTE C., Tijeras, N. Mex.: 423 plants from New Mexico (55751: purchase); 6 living specimens Caetaceae from Tijeras (57024).

ELMER, A. D. E., Manila, P. I.: 793 plants from the Philippine Islands (56666: purchase).

ELSON, A. W., & COMPANY, Boston, Mass.: 2 specimens of newspaper illustration by the rotary photogravure process (56421).

EMERICK, NAT., Chloride, N. Mex.: Specimen of water-bug, *Abdus macronyx* (56204).

ENGELHARDT, George P., Children's Museum, The Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y.: 12 specimens of *Zodia rufago* (56230).

ESSIG, E. O., State Horticultural Commission, Sacramento, Cal.: 29 type slides and 9 cotype slides of 15 species of aphids described by the donor (55808).

EUSTIS, WILLIAM CORCORAN, Chairman, Inaugural Committee, Washington, D. C.: Bronze copy of the medal commemorating the inauguration of President Wilson and Vice President Marshall, March 4, 1913 (55675).

EVANS, WILLIAM T., New York City: 3 paintings in oil, namely, "The Waterfall," by Addison T. Millar (56642); "Gloucester Harbor," by Guy C. Wiggins (56942); "A Good Story," by Clara T. MacChesney (56975).

FAHS, R. Z., Edmonds, Wash.: Land and marine shells from Washington (55954).

FAIRFAX, The Misses GWENDOLINE and LILLIAN, Washington, D. C.: A cradle of the eighteenth century, used by William Faulkner, who served in the 4th and 6th Pennsylvania regiments during the War of the American Revolution (56804).

FALL, Mrs. GEORGE W., Nashville, Tenn.: Blue brocaded satin dress, made by Worth in 1844, and worn by Mrs. James K. Polk at the White House (56907).

FARNSWORTH, ALVA, North Rose, N. Y. (through Mr. A. C. Weed): Shrew, *Cryptotis parvus* (55977).

FAUNTLEROY, Miss JULIET, Lynch Station, Va.: 43 plants from Virginia (56225; 56380).

FEDERATED MALAY STATES MUSEUMS. (See under Kuala Lumpur.)

FELIPPONE, DR. FLORENTINO, Montevideo, Uruguay: Shells from Uruguay (57071).

FERRISS, JAMES H., Joliet, Ill.: 15 ferns mainly from the southwestern part of the United States (56556); skin of a rattlesnake from Arizona (57055).

FESTA, DR. ENRICO, Museo di Storia Naturale, Turin, Italy: 3 rabbits, 2 mice and a dormouse, from Italy and the island of Rhodes (56610); specimen of *Cervus corsicanus* and one of *Sus meridionalis*, from Sardinia (56805).

FIELD MUSEUM OF NATURAL HISTORY, Chicago, Ill.: Fragment and tracing of the type of *Coclopleurum maritimum* (56480); 11 ferns from Peru (56538). Exchange.

FISHER, MISS ELIZABETH GRACE, Stanford University, Cal.: 51 specimens of isopods, representing 6 species (56196; 56244).

FISHER, GEORGE L., Houston, Tex.: 267 plants principally from Texas and Missouri (55878; 56004; 56377).

FITCH, WILLIAM R., Smithsonian Institution: 7 living specimens of Cactaceae from near Steele, N. Dak. (56091).

FLETCHER, MRS. MARY MANNING (through Mr. Van H. Manning, executor, Washington, D. C.): 99 ethnological specimens, consisting mainly of basketry and beadwork, bequeathed in memory of her husband, Louis C. Fletcher (55955: bequest).

FLINT, DR. JAMES M., U. S. Navy (retired), Washington, D. C.: 4 specimens of nummulite limestone from the Pyramid of Cheops; 28 microscopic slides of mineral substances collected during a cruise of the U. S. S. *Nero* (see Bull. U. S. N. M. No. 55); 134 microscopic slides of

FLINT, DR. JAMES M.—Continued.
animals and plants; 4 microscope slides of diatoms and coccoliths; one microscope (Crouch, London), and accessories; one microtome; one turntable; 21 slide boxes, 90 microscopic slides of foraminifera, radiolaria, etc. (56117).

FOLLENSBEE, FRANK, Clarendon, Va.: A gold medal presented to Joshua Folleensbee, naval engineer, by the Chamber of Commerce and Citizens of New York in commemoration of his services in laying the first transatlantic telegraph cable in 1858 (56385: loan).

FOLSOM, J. W., Urbana, Ill.: 15 specimens of *Collembola*, including 5 cotypes of 3 species (56899).

FORD, DANNA and STANLEY, Harlingen, Tex.: 3 species of Saturnian cocoons (56900).

FORD, J. S., jr., Harlingen, Tex.: Moth, *Rothschildia jorulla* (56717).

FOREST SILK COMPANY, New York City: 12 samples of brocaded novelty silks (56947).

FORRESTER, MRS. ROBERT, Salt Lake City, Utah (through Dr. George H. Girty, U. S. Geological Survey): A specimen of calcareous tufa from a spring terrace between Silverton and Durango, Colo. (56083).

FORTUNE, G. M., Buffalo, Kans.: Larva of a moth of the family Cossidae (56673).

FRACHTENBERG, L. J., Bureau of American Ethnology: Headdress, 2 large and 2 small sets of guessing games of the Chatco Indians of Oregon (56275: purchase).

FRANKFORT (ON-THE-MAIN), GERMANY, SENCKENBERGISCHE NATURHISTORISCHES MUSEUM: Cast of gorilla skull (55935).

FREEMAN, MRS. NATHANIEL, Washington, D. C.: 16 stereoscopic photographs, a daguerreotype and a melanotype (55843).

FREIRE-MARRECO, Miss B., Somerville College, Oxford, England: A sample of red ochre used as face paint by the Indians at McDowell, Ariz. (56520).

FREMLIN, WALTER T., Bearstead, Kent, England (through Mr. Walter H. Levy, London, England): 2 skins of "hermaphrodite" pheasants from England (56607).

FREY, MISS FRANCES H., Lebong Soclet, Benkulen, Sumatra: 14 insects, consisting of 9 Lepidoptera, 2 Coleoptera, 1 Phasmid, 1 Heteroptera and 1 Cicadidae (56157).

FREY, H. L., U. S. Navy, Olongapo, P. I.: Specimen of young "walking-leaf," *Phyllum* sp., nymph (56766).

FRIEDRICH, ALBERT, San Antonio, Tex.: 2 specimens of Hemiptera, *Laternaria phosphorea* (56438).

FRIERSON, L. S., Frierson, La.: 2 specimens of *Nodularia bakeri* from Lake Albert Nyanza, Africa (57010).

FRITSCHE, OSKAR, Taucha bei Leipzig, Germany: Skin, skull and leg bones of a wolf, *Canis lupus*, from Tulcea, Dobrudscha (56400: purchased from the Harrison fund).

FUHRMANN, Prof. Dr. OTTO, Musée d'Histoire Naturelle, Neuchâtel, Switzerland: 2 cotypes of *Oropipatus bimbergi* (56061: exchange).

FUKAI, T., Konosu, Saitama, Japan: 18 bees, 36 sawflies and 27 parasitic Hymenoptera (56121).

FULTON, BENTLEY B., New York Agricultural Experiment Station, Geneva, N. Y.: 2 specimens of *Cacus acanthi* (56561).

GAMBLE, DR. H. McS., Moorefield, W. Va.: 10 living specimens of *Opuntia opuntia* from West Virginia (55694).

GARFIELD SMELTING COMPANY, Garfield, Utah (through Mr. Frank L. Hess, U. S. Geological Survey): Oolitic sand (56353).

GARO, J. H., Boston, Mass. (through Mr. George W. Harris, Washington, D. C.): Photographic portrait of a man (56585).

GATES HANDLE COMPANY, Beaumont, Tex.: Pupa of beetle, *Stratejus julianus* (57103).

GATES, Prof. WM. H., Louisiana State University and Agricultural College, Baton Rouge, La.: Isopods, *Probopyrus bithynis* parasitic on shrimps, *Macrobrachium ohionis* (56027).

GAULEY MOUNTAIN COAL COMPANY, Ansted, W. Va.: Specimen of cannel coal (56549).

GAUMER, DR. GEORGE F., Taenubaya, D. F., Mexico: 2 skins of *Nyctidromus albicollis yucatanensis* from Yucatan (55902).

GEARE, ILTYD H., Hongkong, China: Specimen of a common Chinese and Japanese longicorn beetle, *Macrauaster chinensis* (55789).

GEBIEN, H., Naturhistorisches Museum, Hamburg, Germany: 15 beetles, 12 of which are cotypes, representing 11 species (56972: exchange).

GEE, Prof. N. GIST, Soochow University, Soochow, China: A small collection of miscellaneous insects (55680); 237 modern Chinese coins—211 copper and 26 brass (55708).

GENNELL, A. J., St. Ignace, Mich.: Fragment of limestone with natural markings resembling ornamental designs (55998).

GEOLOGICAL SURVEY, DEPARTMENT OF MINES, Ottawa, Canada: Fishes from Vancouver Island (56221).

GEOGETOWN, BRITISH GUIANA, SCIENCE AND AGRICULTURE DEPARTMENT (through Mr. G. E. Bodkin): Lepidoptera representing 5 species (55730).

GEOGETOWN GAS LIGHT COMPANY, Washington, D. C.: Sample of gas-house coke (57123).

GERDAU, OTTO, COMPANY, New York City: Photograph showing clusters of vegetable ivory fruits (56800).

GERVAIS, Brother, Ancon, Canal Zone: 48 plants collected in the Canal Zone (55750).

GHIDINI, A., Musée d'Histoire Naturelle, Geneva, Switzerland: 12 skulls of chamois, *Rupicapra rupicapra*, from Switzerland (57054: purchased from the Harrison fund).

GIBSON, ARTHUR, Ottawa, Canada: 5 specimens of Microlepidoptera (55994); cotype of *Heliodines nyctaginella* (56700).

GILL, DE LANCEY, Bureau of American Ethnology: Vertebra of a porpoise showing use as a polisher, found by the donor in a shell-heap near Chesapeake Beach, Md. (55866); 25 silver albumen prints (56576).

GILL, G. W., U. S. National Museum: Crab, *Callinectes*, with ascidians and barnacle attached (55788); 2 salamanders from Virginia (55891); 8 miscellaneous insect larva (55924); marine shells from Rehoboth Beach, Del. (56099).

GILLETT, MRS. ALFRED S., Washington, D. C.: Commission of Samuel Jones as second lieutenant "Eighth Company, in a Regiment of Foot raised in the Colony of Connecticut," March 24, 1760; fragments of a letter written by Lieut. Samuel Jones to his father and mother on August 18, 1758, describing the battle of Ticonderoga; facsimile printed in 1844 of Henry Newman's Almanack published in 1691. (Presented in memory of Alfred S. Gillett) (56458); 23 pieces of pink iuster-ware (56459: loan).

GILLETT, C. E., Philadelphia, Pa.: Lizard from Mexico (56082).

GILLETTE, Prof. C. P., Colorado Agricultural College, Fort Collins, Colo.: 34 specimens of sawflies, including 14 types and 3 paratypes (56428: exchange). (See under Colorado Agricultural College.)

GILMORE, C. W., U. S. National Museum: 36 bats, *Myotis*, from Teton County, Mont. (55934).

GIRARD, ALFRED O., Milwaukee, Wis.: 240 ethnological specimens, including American Indian and Philippine costumes, weapons, baskets and oriental fabrics (55881: loan).

GOETZ SILK MANUFACTURING COMPANY, New York City: 6 specimens of peau de cygne and cotton-back satin (57094).

GOLDENSKY, ELIAS, Philadelphia, Pa. (through Mr. George W. Harris, Washington, D. C.): Photographic portrait of a lady (56587).

GOLDNER, RUSSELL, Culver, Ind.: 4 living specimens of *Opuntia humifusa* from near Lake Maxinkuckee, Ind. (56626).

GOODDING, LESLIE N., Flagstaff, Ariz.: 26 living specimens of Cactaceae from La Ciénaga, Sonora, Mexico (55696); 3 ferns from Arizona (55719).

GORDON, MAURICE, Nantes, France: 2 skulls of *Sciurus vulgaris alpinus* from France (56667).

GOUVERNEUR, MISS MAUD C., Washington, D. C.: Pale blue silk dress embroidered in straw, which belonged to Mrs. Maria Hester Monroe Gouverneur, youngest daughter of President James Monroe (56208); Monroe relics, consisting of a silver chocolate pitcher and a silver cream jug (57002). Loan.

GOWANLOCK, J. N., Winnipeg, Manitoba: An obsidian knife blade (56000).

GRAY HERBARIUM, HARVARD UNIVERSITY, Cambridge, Mass.: 8 specimens of Empetraceae from British America (56164); specimen of *Polypodium* from Bolivia (56990). Exchange.

GREEN, E. C., Maranhão, Brazil: Marine shells from near Guimaraes, Brazil (56044).

GREEN, MRS. HELEN COLES SINGLETON, Columbia, S. C.: Costume which belonged to Mrs. Abraham Van Buren, consisting of a blue velvet skirt and waist, with lining and hoops, a lace

GREEN, MRS. H. C. S.—Continued. fitchu, lace and embroidered handkerchief, and a fan (56167: loan).

GREENE, C. T., Bureau of Entomology, Washington, D. C.: 36 Diptera from Falls Church, Va. (55874).

GREENE CONSOLIDATED COPPER COMPANY, New York City: Copper ores from Cananea, Sonora, Mexico, received at the close of the Louisiana Purchase Exposition, 1904 (56799).

GRISWOLD, MISS JENNIE M., Washington, D. C.: Needlework and wearing apparel, silverware, glassware, a velvet-and-brass-bound prayer book, and ethnological specimens, embracing 69 pieces (56611; 56985). Loan.

GRONBERGER, S. M., Smithsonian Institution: An example of rapid rotary intaglio printing, "Lower Manhattan," from the etching by William Monk (57083).

GROUT, DR. A. J., New Dorp, N. Y.: 25 specimens of North American mosses (56126: purchase).

GRUELICK, K. WILLIAM, Lafayette, Ind.: Moth, *Telea polyphemus* (55744).

HAAGE AND SCHMIIDT, Erfurt, Germany: 5 living specimens of Cactaceae, consisting of 1 specimen of *Cereus peruvridis* and 4 specimens of *Opuntia* (56939; 57023). Exchange.

HAGUE, MRS. ARNOLD, Washington, D. C.: Cape of Mechlin lace (55657).

HALBACH, EDWIN, Washington, D. C. (through Mr. E. J. Brown): Snake, *Diadophis punctatus*, from the District of Columbia (55685).

HALL, R. O., San Jose, Cal. (through Prof. F. W. Clarke): Samples of bindheimite from near Johannesburg, Cal. (56448).

HALSALL, WILLIAM F., Provincetown, Mass.: 56 marine paintings in oil, including "Our Glory—Battleship Oregon" (56792: loan for special exhibition).

HAMBURGER, M. E., Washington, D. C.: Specimen each of synthetic ruby and sapphire (56598: exchange).

HAMILTON, DR. ALLAN McLANE, Great Barrington, Mass.: 2 early American chairs which belonged to Maj. Gen. Philip Schuyler; 2 early American chairs, 2 side-tables and a half-round mahogany table which belonged to Alexander Hamilton; and a small work-table which belonged to Mrs. Alexander Hamilton (56125).

HAMMEL, PROF. R. J., Maquoketa, Iowa: Practice violin and a pair of German cymbals (56003: exchange).

HAMMER, L. F., St. Louis, Mo.: Photograph of the donor (57133).

HAMMOND TYPEWRITER COMPANY, Washington, D. C.: Hammond typewriter No. 147,859 (56782).

HANBURY, LADY KATHERINE A., La Mortola, Ventimiglia, Italy: 45 living specimens of *Opuntia* and a packet of seeds of *Furcraea* (55785: exchange).

HANCOCK, DR. JOSEPH L., Chicago, Ill.: Type specimen of *Anepteres rufipes*, a hymenopterous insect (56127).

HANDY, MRS. WILLIAM TORRENCE, Cynthiana, Ky.: Velvet dress, costume of Mrs. Jane Irwin Findlay, wife of Gen. James Findlay, one of the mistresses of the White House during the administration of President William Henry Harrison, 1841 (56913: loan).

HANFORD, CHARLES J., Sarasota, Fla.: 40 specimens representing 30 species of shells, and 2 fragments of fossil ribs (manatee?), from Sarasota (55769).

HANSEMANN, PROF. DAVID PAUL VON, Berlin, Germany: A series of 16 prepared anatomical specimens; also copies in plaster of 12 brain casts (55859: exchange).

HARMON, MRS. T. S., Marydel, Md.: Handwoven coverlet (57006: purchase).

HARRING, H. K., Bureau of Standards, Washington, D. C.: 6 microscopic slides of types of 6 new species of Rotifera, described by the donor

HARRING, H. K.—Continued. (55796); 97 microscopic slides of Rotifera from the District of Columbia (55967; 57029).

HARRIS, GEORGE W., Washington, D. C.: Photographic portrait of a man (56583). (See under H. D. Beach, Frank Scott Clark, E. B. Core, J. H. Garo, Elias Goldensky, Dudley Hoyt, Henry Havelock Pierce, and J. C. Strauss.)

HARRIS, CAPT. J. R., Medical Corps, U. S. Army, Fort Slocum, N. Y.: An incomplete wild cock snare and a Moro buyo box of brass inlaid with silver (55688); Moro book, Moro musical instrument, "Jew's-harp," and a pair of Igorot statuettes (55961); 50 ethnological specimens, mostly Moro, including an outfit of Terarai bows and arrows, a kam-pilan, a krts with band-strings still attached; also a large bamboo mat and 2 palm leaf mats, Moro (56945).

HARRIS, WILLIAM, Hope Gardens, Kingston, Jamaica: Poecilid fishes representing the genera *Gambusia* and *Pacilia* (56171); fishes known as "millions" or "minnows," *Girardinus paciloides*, introduced from Barbados (56592).

HARRISON, GEORGE L., JR., Philadelphia, Pa. (See under Oskar Fritsche, A. Ghidini and Thomas V. Sherrin.)

HARVARD COLLEGE OBSERVATORY, Cambridge, Mass. (through Prof. E. C. Pickering, director): 38 photographs of stellar spectra, apparatus, etc. (55834).

HAUSCHILD, M. L., Gjentofte, Denmark: About 680 insects, mostly Coleoptera, from various parts of the world, all determined by European specialists (56118).

HAWKEYE PEARL BUTTON CO., Muscatine, Iowa: A collection showing the different stages in the manufacture of pearl buttons, the shells from which buttons are obtained, and a model of a boat and apparatus used in collecting the shells (56402).

HAY, DR. O. P., Washington, D. C.: Skull, lower jaw and 5 cervical vertebrae of a large fossil bison from Alaska (55703: purchase).

HAY, Prof. W. P., Business High School, Washington, D. C. (through Mr. Austin H. Clark): 3 specimens of *Peripatoides nova-zelandiae* from New Zealand (56937).

HAYNES AUTOMOBILE COMPANY, Kokomo, Ind.: A 6-cylinder automobile motor, so prepared as to show the internal mechanism and operation (56860).

HAYNES, Miss CAROLINE C., Highlands, N. J.: 35 specimens of Hepaticae from North America (56306).

HEINRICH, CARL P., U. S. Department of Agriculture, Washington, D. C.: 25 Diptera from Chesapeake Beach, Md. (56120).

HELLER, Prof. A. A., Chico, Cal.: 37 plants mainly from Nevada (55988; 56162); 450 plants from California and Nevada (56273; 57111: purchase).

HEMMICK, MRS. CHRISTIAN D., Washington, D. C.: Silver plaque (Louis XVI, France); carved ivory plaque (early 18th century, Italian); carved ivory erosier (Italian); and an antique silk rug (57036: loan).

HEMPEL, H. A., Buffalo, N. Y.: 6 quoins and 2 castings of quoins, invented by the donor (55761).

HENDERSON, JOHN B., Washington, D. C.: Specimen of stomatopod, *Lysiosquilla glabriuscula*, from off Fowey Rocks, Fla. (56081); 2,000 marine mollusks from Chincoteague, Va., with other invertebrates and a few fishes taken in the dredge (56362).

HENRY, Miss CAROLINE, Washington, D. C.: A colored photograph of Prof. Joseph Henry and a collection of daguerreotypes and stereoscopic views, comprising 146 specimens (55663).

HERBRUCK, R. A., Dayton, Ohio: Gartersnake, *Thamnophis sirtalis*, from Ohio (56838).

HERREN, CARL, Newport, Oreg.: Specimen of *Hinmanites giganteus* (56788).

HESS, FRANK L., U. S. Geological Survey, Washington, D. C.: Specimen of autunite from Penland, N. C. (55728); 6 specimens of torbernite with autunite and 1 of carnotite with davidite from Australia; also a specimen of tyuyamunite from Siberia (56354); 2 specimens of the mineral kolm from Stromsberg, Sweden (56515); specimens of torbernite from South Australia and one of cyrtolite and altered uraninite from Sprucepine, N. C. (56798).

HESS, L., AND COMPANY, New York City: 4 1-yard lengths of linen dress goods, and 14 small samples of linen and cotton dress goods (56725).

HESS, W. E., Mayaguez, P. R.: 54 ferns from Porto Rico (56479; 56552).

HEYE, GEORGE G., The Heye Museum, New York City: Casts of Porto Rican stone collar, 2 zemes and a carved shell face-mask pendant; 7 fragments of pottery "graters" from Ecuador (56539: exchange).

HILL, W. B., Renick, W. Va.: 7 specimens of *Platygonus*, including portions of skulls, lower jaws and limb bones (55775).

HINKLEY, A. A., Dubois, Ill.: Land and fresh-water shells from Guatemala (56207); fossils (probably Oligocene) from the bank of a small stream entering Rio Dulce, Guatemala; sample of overlying limestone covering fossiliferous strata (56593).

HORAM, Brother, San Juan, P. R.: 25 ferns from Porto Rico and Mexico (55801; 56482).

HOBSON, MRS. ELIZABETH C. (through Mrs. Richard G. Lay, Washington, D. C.): Piece of Mechlin lace, 19th century (55654).

HODGKINSON, H. H., Franklin Furnace, N. J. (through Dr. W. T. Schaller, Washington, D. C.): A specimen of hodgkinsonite (part of the type material described by Prof. C. Palache and Dr. Schaller (56247).

HOES, Mrs. R. R., Washington, D. C.: Relics relating to President James Monroe and his descendants—Side chair, footstool and a Chippendale table, brought from France in 1796 by Mr. and Mrs. James Monroe; standing dresser-mirror made of mahogany and one of the fragments left from the mirrors of the White House after its destruction by the British in 1814 (56297; 56546); pair of paste slipper buckles worn by James Monroe; and a vinaigrette, slipper, buckle and 2 pieces of dress silk, worn by Mrs. James Monroe (56342); seal, fan and a music book of 1818, which belonged to Mrs. Maria Hester Monroe Gouverneur, youngest daughter of James Monroe (56408); letter signed by James Monroe, March 2, 1786; letter transmitting French Revolutionary badge; also 5 French and American Revolutionary badges and decorations and a cockade, 2 razors (1 French and 1 English), and a silver spur, all worn and used by James Monroe (56460); collection of laces, embroideries, jewelry, books, etc. (57090). Loan.

HOFFMAN, L. J., Burton, Nebr.: A concretion of ferruginous sand (56424).

HOGAN, Mrs. LOUISE E., Rockaway Beach, N. Y.: Tiré filet bedspread prepared by the women of Porto Rico (55914: purchase).

HOLABIRD, W. H., Los Angeles, Cal.: Dipterous and neuropteroid larvæ and work from southern California (56453).

HOLLISTER, N., U. S. National Museum: 13 mammals, 5 birds and a snake, from Wisconsin (56036; 56418); skin of tufted titmouse, *Baolophus bicolor*, from Maryland (56754).

HOLLOWAY, JAMES B., Thermopolis, Wyo.: Portion of lower jaw of *Systenodon tapirinum* (56822).

HOLSTEIN, OTTO, San Antonio, Tex.: 25 bird skins from Ecuador (57028).

HOME MISSION COMMITTEE OF GREENBRIER PRESBYTERY, Alderson, W. Va.: 8 stone implements found near Jerusalem (56814).

HOOD, J. D., Bureau of Biological Survey, Washington, D. C.: 4 pairs of *Melanoplus* (56743).

HOPKINS, Mrs. ARCHIBALD, Washington, D. C.: A Grover and Baker sewing machine, patented February 11, 1851, June 22, 1852, February 22, 1853, and May 27, 1856 (56470).

HOPKINS, L. S., Kent, Ohio: Specimen of *Lycopodium* from Ontario (56405).

HOUGH, JOHN S., Pittsburgh, Pa.: Brass token of the political campaign of 1852, bearing the portrait of Gen. Winfield Scott (56783).

HOUGH, DR. WALTER, U. S. National Museum: Piece of lace-bark, *Lagetta lintearia*, collected in Jamaica (55941).

HOUSE, HOMER D., Albany, N. Y.: Fern from Oregon (55802); fern, *Woodsia*, from New York (55847).

HOWARD, ELBERT, Doyle, Cal.: Specimens of fresh-water algae, *Chara* (57043).

HOWELL'S *MICROCOSM, Washington, D. C.: A small piece of Copiapo palasite (56698: exchange).

HOYT, DUDLEY, New York City (through Mr. George W. Harris, Washington, D. C.): Photographic portrait of a lady (56586).

HRDLIČKA, DR. ALEŠ, U. S. National Museum: A pemmican hammer (Teton Sioux Indian), collected by Mr. Frank Mička (55760); skeleton of a mouse from Huarochiri, Peru (55781); mole, *Scalopus aquaticus* (55908); gray squirrel, *Sciurus carolinensis* (55951); flying squirrel, *Sciuropterus*, from Cleveland Park, D. C. (56087).

HULL, DR. EDWARD E., Philadelphia, Pa.: A spinning wheel and a yarn reel, supposed to have been in use on George Washington's plantation (56613).

HUNT, CLAIR, Colville, Wash.: 74 specimens, including basketry, bags and other ethnological material (56653: loan).

HURRY, RUTGERS IVES, New York City: Single-barrel pistol, Dumas A Lyon; double-action revolver, G. Mercenier (56842).

HURTER, JULIUS, sr., St. Louis, Mo.: Carapace of a turtle (56170); snake, *Lycodon aulicus*, from the Philippine Islands (56041); turtle from Mobile, Ala. (56848).

HUSSEY, CHARLES H., MORSE S. DUFFIELD, and FRANCIS L. WOODS, Ogden, Utah: A large specimen of quartz containing tungsten minerals (56287).

HYDE, A. G., & SONS, New York City: 4 2-yard lengths of all cotton and cotton and silk fabrics (56853).

HYDE, FREDERIC BULKELEY, Washington, D. C.: A bag of ancient Maori featherwork (56227); Hawaiian dance skirt made from palm fiber (56499); mounted loon, *Gavia imber*, from Maine (56962).

IDA, Y., Kagoshima, Japan: Volcanic material from Sakurajima, Kagoshima (57088: purchase).

INDA, J. RIQUELMA, Mexico, Mexico: 18 insects (56623).

INDIAN MUSEUM. (See under Calcutta, India.)

INGLIS, JOHN, Magnet, Ark. (through Mr. Frank L. Hess, U. S. Geological Survey): Specimen of brookite from Magnet (55727).

INTERIOR, DEPARTMENT OF:

Original application for a pension, with related papers, filed by Col. Aaron Burr in 1834 (55700); skulls of 3 bison and skin of a black bear, skin and skull of brown bear, *Ursus americanus*, and robe and skeleton of a buffalo, *Bison americanus*, received through the superintendent of the

INTERIOR, DEPARTMENT OF—Continued. Yellowstone National Park (55984; 56007; 56431).

U. S. Geological Survey: 35 specimens and 25 petrographic slides of rocks from the Santa Cruz quadrangle, Cal., illustrating Geologic Folio No. 163 (55704); 50 concretions collected from various localities in the West by Mr. C. W. Washburne (55739); 294 rock specimens with 164 microscopic slides, illustrating the geology of the Eastport quadrangle, Me., described by Mr. Edson S. Bastin and Mr. Henry S. Williams (55762); 8 specimens of rocks from the Black Hills, S. Dak., collected in connection with the report on the geology of the Northern Black Hills, by Mr. N. H. Darton (55797); 50 specimens of rocks collected by Mr. Darton to illustrate the geology of the Deming quadrangle, N. Mex. (55871); 110 rocks collected by Dr. George I. Finlay to illustrate the geology of the Colorado Springs folio (55823); rocks collected during the summer of 1913 by Messrs. Miser, Ferguson, Diller, Hunter and Loughlin, for use in the preparation of educational sets (56054); collection of rocks illustrative of Bulletin 492, "The gabbros and associated rocks of Preston, Connecticut" (56159); 3 small lots of vertebrate fossils collected by Mr. Dean E. Winchester in the Datil Mountain coal field of New Mexico (56213); 16 boxes of thin sections of rocks and ores from the Marysville and Butte districts, Mont. (56232); 111 specimens of rocks collected chiefly by Mr. W. C. Phalen in and near the Ellijay quadrangle of Georgia, North Carolina and Tennessee (56239); specimen of pyrite from the Stella Mine, Stellaville, St. Lawrence County, N. Y., collected by Mr. Phalen (56423); 4 small lots of vertebrate fossils collected by Mr. E. Russell Lloyd in Morton County, N. Dak. (56248); 62 rock specimens illustrating the geology of the Tacoma quadrangle, Wash., collected in

INTERIOR, DEPARTMENT OF—Continued.
1896 by Dr. Bailey Willis and Dr. G. O. Smith and described in Geologic Folio No. 54 (56254); 30 specimens of basalt from Mt. Stuart quadrangle, Wash., collected by Mr. L. C. Russell in 1899 and described in the 20th Annual Report of the Survey (56255); specimens of inyoite, meyerhofferite and bloedite from California (56286); 9 small lots of vertebrate fossils collected by Mr. C. F. Bowen in the Walcott quadrangle, Wyo. (56317); 91 specimens of rocks from the Hawaiian Islands, collected by Dr. Whitman Cross in 1902, to be described in a Professional Paper of the Survey; and 3 specimens of rocks from the Hawaiian Islands, collected by Mr. Waldemar Lindgren and described by him in Water Supply Paper No. 77 (56318); 84 specimens of rocks from the Butte district, Mont., collected by Mr. G. W. Tower and Dr. S. F. Emmons (56319); humerus of a bison, collected by Mr. Jos. C. Gawler in the bed of the Rio Grande at Elephant Butte, N. Mex. (56364); Permian vertebrate fossils obtained by Mr. Carroll H. Wegemann in the Red River oil field of Oklahoma (56372); 19 rock specimens illustrating a report on "Coal on Dan River, North Carolina," published in Bulletin 471, Part B (56381); 71 specimens of country rock and ore collected by Mr. R. W. Stone in 1911 and 1912 during the examination of the Northern Pacific Railway land grant lands in Montana (56387); specimens of country rock and rock phosphate from the Elliston phosphate field, Mont., and specimens of country rock and mineral deposits from Flathead Indian Reservation, Mont., collected by Mr. Stone in 1912 and 1913 for the purpose of land classification (56953; 56954); a figured specimen of *Scutaster andersoni* from the Miocene of Mount Pinos quadrangle, Cal. (56413); a small collection of fossil fish remains

INTERIOR, DEPARTMENT OF—Continued.
from the Caney shale of Oklahoma, collected by Dr. George H. Girty (56445); carboniferous invertebrates from the Manzano group of New Mexico, described by Dr. Girty in Survey Bulletin No. 389 (56812); a collection of fossil insects obtained by Mr. E. G. Woodruff from the Green River formation on the east side of Evacuation Creek, near Ute Station, on the Uintah Railway, eastern Utah (56446); 6 small lots of Tertiary vertebrate fossils collected by Mr. Woodruff in northeastern Utah (56474); 21 specimens of phosphate rock from the Phosphate District, Perry County, Tenn., described by Dr. Charles Willard Hayes in the 17th Annual Report of the Survey, Part 2 (56449); 62 rock specimens from the Klamath Indian Reservation, Oreg., collected by Mr. H. G. Ferguson in October and November, 1913 (56450); 45 specimens of rocks, chiefly rhyolites, from the Bullfrog district, Nev., described in Survey Bulletin No. 303 (56476); 7 boxes of Cretaceous vertebrate fossils collected in 1913 by Mr. C. W. Gilmore in the Two Medicine formation of the Blackfeet Indian Reservation, Mont. (56678); hand specimens and thin sections of rocks and minerals from the Philipsburg quadrangle, Mont., described in Professional Paper No. 78; 3 specimens of soil and tuff from east-central Washington, described in Water Supply Paper No. 118 (56820); collection of rocks from a strip approximately ten miles wide along the northeastern boundary between Porthill, Idaho, and Lake Osoyoos, Wash., consisting of 357 specimens; also thin sections of the same (56821); collection of fossil plants from Cape Lisburne, Alaska, obtained by Prof. Arthur J. Collier in 1904, and described by Dr. F. H. Knowlton in Professional Paper No. 85, Part D (56850); fragments of a soapstone jar found by Mr. N. H. Darton at an altitude of

INTERIOR, DEPARTMENT OF—Continued. 10,100 feet, 3 miles southwest of the summit of Cloud Peak, Big Horn Mountains, Wyo. (56901); a barite concretion with radial structure, collected by Mr. C. A. Bonine 30 miles northeast of Ekalaka, Mont. (56931); 2 boxes of specimens and drill cores from the Ordovician outlier at Hyde Manor, Sudbury, Vt., collected by Mr. T. Nelson Dale and described in two papers in the American Journal of Science (56932); a collection of Cretaceous plants mostly from the Tuscaloosa formation, comprising the types and figured specimens described by Mr. E. W. Berry (56955); collection of Cretaceous and Tertiary plants comprising the types and figured specimens described by Mr. Berry in Professional Paper No. 84 (56994); 25 specimens of *Exogyra*, constituting the types and figured specimens described by Dr. L. W. Stephenson in Professional Paper No. 81 (56995); specimens of glauberite and colemanite from California, and a nodule of pyrite from Texas (57051). (See under Carnegie Institution of Washington.)

Office of Indian Affairs: An Indian war bonnet (56282:loan).

INTERNATIONAL FISHERIES COMPANY, Tacoma, Wash.: Skull of a common harbor porpoise, *Phocena* (56494).

IRELAND, C. F., Port Arthur, Tex.: Spinal bone of a spade-fish (also known as sheepshead porgy or white angel-fish), *Chatodipterus faber* (55S36).

IRELAND, DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR, (FISHERIES BRANCH), Dublin, Ireland: Specimens of deep-water echinoderms representing 16 species (56956).

JACKSON, MISS FANNIE A., Yonkers, N. Y. (through Mrs. Julian James): 2 beaded pouches or bags made by the Iroquois Indians, and a pair of baby's beaded moccasins made by the Sioux Indians (57084); 2 dresses,

JACKSON, MISS FANNIE A.—Continued. gloves, slippers and lava jewelry which belonged to the family of Thomas Reed Jackson, architect of the Academy of Music, New York City, and his wife Charlotte R. Myers Jackson (57128:loan).

JACKSON, H. H. T., Bureau of Biological Survey, Washington, D. C.: 3 lampreys from Riverdale, Md. (56927).

JACKSON, MRS. THOMAS R., Yonkers, N. Y. (through Mrs. Julian James): A gold-and-ribbon insignia of membership of the National Society of the Daughters of the American Revolution (56131:loan).

JACOBS, C. H., Philadelphia, Pa.: 2 specimens of cusk-eel, *Ophidium marginatum* (55742).

JAHN, DR. ALFREDO, Caracas, Venezuela: 300 plants from Venezuela (55S11: purchase).

JAMES, I. E., Pittston, Pa. (through Mr. David White, Washington, D. C.): 2 carboniferous plants (56722).

JAMES, MRS. JULIAN, Washington, D. C.: Marine shells and other invertebrates collected by Lieut. Commander T. B. M. Mason, U. S. Navy, chiefly on the western coast of America (56026); fan of pandanus from Honolulu, Hawaii (56324); an old copy of Milton's "Paradise Lost" (56409); a graphoscope, 103 stereoscopic views and 2 daguerreotypes (56442; 57086); a pamphlet entitled "Roll of Honor of the Seventh Regiment, National Guard, S. N. Y." (56780: loan); 6 pieces of Japanese cloisonné; collection of wearing apparel and accessories and articles pertaining to the occupations and amusements of ladies and gentlemen of the 19th century; oil painting "View up the Hudson," by Robert Weir (57087: loan); 3 billiard cues used by, and 8 bound volumes relating to, members of the Bailey-Myers-Mason families (57129: loan). (See under Miss Fannie A. Jackson, Mrs. Thomas R. Jackson, Miss L.

JAMES, MRS. JULIAN—Continued.
L. Lander and Mrs. John E. McElroy.)

JEFFREY MANUFACTURING COMPANY, Columbus, Ohio: 7 photographic enlargements of views of Jeffrey apparatus at work in coal mines (56565).

JENKINS, C. FRANCIS, Washington, D. C.: Design of motion picture projector (56293).

JENNINGS, ALLAN H., Bureau of Entomology, Washington, D. C.: About 100 specimens of fresh-water shells from Antigua and Barbados; specimens of young toads, *Bufo marinus?*, from Barbados (56749).

JENNINGS, W. P., Salt Lake City, Utah (through Mr. Victor C. Heikes): A stalactite coated with calcite and malachite crystals (56784).

JOBE, ROBERT L., Elizabethhton, Tenn. (through Mr. J. C. Ayer, Philadelphia, Pa.): A specimen of actinolite from Avery County, N. C. (55931).

JOHNSON, DR. H. L. E., Washington, D. C.: A fiber garment made by the Guapore Indians, Guapore River, northern Brazil, and 2 wasp nests from the same locality (56839).

JOHNSTON, H. F., Carnegie Institution of Washington, Washington, D. C.: Specimen of *Oryza* from Java (56948); specimen of fruit of the "double cocoanut," collected on the coast of Mauritius (56982).

JONES, MARCUS E., Salt Lake City, Utah: 15 specimens of living Cactaceae from Utah (55651; 56090); 12 plants from Utah (55833: exchange).

JORDAN, MISS SUSAN D., Meredithville, Va.: Larva of *Prionus laticollis* (56649).

JUDD, NEIL M., U. S. National Museum: 23 archeological and ethnological specimens from the interior of Guatemala, collected by Mr. Judd (57062: purchase).

KAHN, DR. ULYSSES S., New York City: 8 progressive proofs of 4-color halftone reliefs made from an autochrome plate of a stained glass window, together with the autochrome plate (57101).

KAIN, JOHN Q., Matagorda, Tex.: Invertebrates. 6 species of mollusks from Texas, and specimens of beans (56691).

KAISELICHER BOTANISCHER GARTEN PETER DES GROSSEN. (See under St. Petersburg, Russia.)

K. K. NATURHISTORISCHES HOFMUSEUM. (See under Vienna, Austria.)

KARPELES, DR. S. R., Washington, D. C.: An anatomical specimen (56501).

KEASBEY AND MATTISON COMPANY, Ambler, Pa.: 105 samples of asbestos (56625).

KELEHER, MISS EDITH R., Washington, D. C.: 6 earthworms (57038).

KELEHER, T. A., Washington, D. C.: Entomological specimens exhibiting the life cycle of the silkworm moth, including eggs, larvae and chrysalis in formalin; whole and pierced cocoons, and moths; also small school cabinet (56088).

KENNAN, MRS. GEORGE, Medina, N. Y.: Kaffir knob-kerry (56701: loan).

KENNEDY, CLARENCE H., Sunnyside, Wash.: 48 Odonata (*Argia emma*, n. sp., types and cotypes of adults and nymphs; *A. virida*, adults and nymphs) (56280).

KERTESZ, DR. K., Hungarian National Museum, Budapest, Hungary: About 10 specimens of Diptera (55673).

KEYSER, E. M., Ancon, Canal Zone: 2 lepidopterous larvae, *Pseudosphinx tetrio* and *Megalopyge lanata* (55698); beetle, *Euchroma goliath*, and a spider, *Acrosoma obtusospina* (55856).

KEYSER, E. W., Washington, D. C.: 17 ethnological specimens from the United States, Paraguay, west Africa and the Philippine Islands (56500: exchange).

KIMBALL, Miss LAURA F., National City, Cal.: 3 ferns from California (56878).

KNAB, FREDERICK, Bureau of Entomology, Washington, D. C.: Specimen of *Castalia* from Virginia (55879); 1,457 insects, mostly Diptera, from Chesapeake Beach, Md., Virginia Beach, Va., and the vicinity of Washington, D. C. (56119; 56363).

KOLB, HENRY M., Philadelphia, Pa.: An old gun barrel with one side cut away to show the form of rifling (56928).

KÖNIGL. BOTANISCHER GARTEN UND BOTANISCHES MUSEUM. (See under Berlin (Dahlem bei Steglitz), Germany.)

KÖNIGL. ZOOLOGISCHES MUSEUM. (See under Berlin, Germany.)

KOTINSKY, J., U. S. Department of Agriculture, Washington, D. C.: 3 insects (56436).

KOZU, Dr. S. Geological Institute, Imperial University, Sendai, Japan: A volcanic bomb (56269); sample of bronzite from Japan (56475).

KRANTZ, Dr. F., Bonn, Germany: Plaster casts of the skull of La-Chapelle-aux-Saints, with brain cast; the lower jaw bone of *Propliopithecus hockli*; the lower jaw bone of *Parapithecus frassi*; and the lower M_1 and M_2 of *Märripithecus markgrafi* (55754: purchase); 3 meteorites, 15 minerals and 2 vertebrate fossils (56858: exchange).

KRIEGER, Dr. R., Leipzig, Germany: Specimen of *Xanthopimpla kriegeri* (56154).

KRYGER, J. P., Gjentofte, Denmark (through Dr. Adam Giede Böving): 124 vials of parasitic Hymenoptera (56554).

KUALA LUMPUR, FEDERATED MALAY STATES, FEDERATED MALAY STATES MUSEUMS: 2 specimens of *Zosterops* from the Malay Peninsula (56310).

KUEHLING, J. H., Mount Vernon, Va.: Snake from Virginia (57067).

KUPFER, HENRY, & COMPANY, New York City: 5 2-yard cuts of fancy printed velveteens (56854).

LA FLESCHIE, FRANCIS, Bureau of American Ethnology: Nodule of iron ore suggesting an art form (56053); a bundle of counting-sticks, used in ceremonies by the Osage Indians, Oklahoma (56407).

LAMB, Dr. D. S., Army Medical Museum, Washington, D. C.: 2 anatomical specimens (56655; 56844).

LANDER, Miss L. L., Washington, D. C. (through Mrs. Julian James): 2 India shawls and a black malines lace veil, owned by Miss Lander's mother (56079).

LANGHORNE, MARSHALL, Washington, D. C.: Beetle, *Megasoma elephas*, from San José, Costa Rica (55993).

LA SALLE COLLEGE, Ancon, Canal Zone (through Brother G. Ireneo): Cœlenterates and echinoderms (56846).

LATCH, EDWARD H., Washington, D. C.: Specimen of towhee bunting, *Pipilo erythrophthalmus*, from Washington (56009).

LAWRENCE AND COMPANY. (See under Pacific Mills.)

LAWSON, J. B., Sevierville, Tenn.: Sample showing psilomelane coating quartz (56886).

LAY, Mrs. RICHARD G., Washington, D. C.: 2 pieces of Spanish macramé lace (55658).

LEA, ARTHUR M., Adelaide, South Australia: 13 beetles from Australia (56541).

LEAVY, JOSEPH B., U. S. National Museum: 16 uncanceled United States postage stamps (56415).

LE BLOND, ROBERT E., Cincinnati, Ohio: 3 Baxter oil prints (56343).

LEE MARBLE WORKS, Lee, Mass.: 2 slabs of dolomitic marble from Lee (56084).

LEHIGH UNIVERSITY (DEPARTMENT OF GEOLOGY), South Bethlehem, Pa.: 11 specimens of native copper from Mexico, and 9 specimens of cinnabarite from Mauch Chunk, Pa. (56357).

LEIBERG, MRS. CARRIE E., Leaburg, Oreg.: The cryptogamic herbarium of the late John B. Leiberg, mainly comprising mosses, hepaticas and lichens from the western part of the United States (56396).

LEIPZIG, GERMANY, MUSEUM FÜR VÖLKERKUNDE: Ethnological objects from the lower Niger (55702: exchange).

LELAND STANFORD JUNIOR UNIVERSITY, Stanford University, Cal.: Type specimen of *Enophrys taurinus* (56220); type specimen of *Ranzaania makua* from Hawaii, and type and paratype of *Salmo eremanni* from California; 51 batrachians and reptiles from California and Nevada (56327); fishes collected in Japan by Dr. D. S. Jordan and Dr. J. O. Snyder, and fishes collected in California by the latter (56467); 64 plants from California and 191 from the Galapagos Islands (56628: exchange).

LERMOND, N. W., Thomaston, Me.: Marine shells, representing 4 species, from Boca Ciega Bay, Fla. (56394).

LESIER, WHITMAN & CO., INC., New York City: 12 specimens of white and colored fancy cotton and cotton and artificial silk dress goods (57077).

LEVY, MAX, Philadelphia, Pa.: 13 engraved screens for halftone process; also a catalogue of "perfected engraved gratings" manufactured by the donor (56471).

LEVY, WALTER H. (See under Walter T. Fremlin.)

LEWIS, NELY, Biloxi, Miss.: 4 skins of muskrat, *Ondatra ruficilia*, from Biloxi (56527).

LEWIS, WALTER P., Phillipsburg, N. J.: An abrading stone (55713); hammer or rubbing-stone from an ancient village site at Phillipsburg (55819).

LIDDELL, WILLIAM, AND CO., New York City: Glazed box showing series of flax products. 2 2-yard lengths of cream damask tablecloth linen, 2

LIDDELL, WILLIAM, AND CO.—Contd. bleached damask tablecloths, colored damask tablecloth and a 1-yard length of plain grass-bleached linen (56946).

LIÈGE, BELGIUM, UNIVERSITÉ DE LIÈGE: Casts of the skeletal remains of the Spy man (55868: exchange).

LILLY, ELI, AND CO., Indianapolis, Ind.: Specimen of *Brosimum alicastrum* from Mexico (56263).

LINDINGER, MISS ANTONIE, Philadelphia, Pa.: Ancient German coin scales and weights (56796: purchase).

LINDLEY, MISS D. M., Louisville, Ky.: Small piece of okouma wood or Gaboon mahogany, *Aucoumea kleiniana*, belonging to the family Burseraceae (56302).

LINTON, DR. EDWIN, Washington and Jefferson College, Washington, Pa.: A limestone pebble, "pseudo-antiquity" (56202).

LLOYD, E. E., PAPER COMPANY, Chicago, Ill.: 40 examples of rubber offset printing on the donors' "artist offset paper" and "offset bristol" (55973).

LLOYD, E. RUSSELL, U. S. Geological Survey, Washington, D. C.: Specimens of fresh-water shells from Cannonball River, Morton County, N. Dak. (56156).

LOCKWOOD, HOMER N. (through Mr. Thomas W. Lockwood, jr., and the American Security and Trust Company, Washington, D. C., executors): 152 walking canes, marble model of Taj Mahal, and a mahogany cabinet of curios consisting of unmounted gems, carvings, enamels, lacquers, pottery, bronzes, inlaid work, embroidery, scarabs, etc. (56368: bequest).

LONDON, ENGLAND, BRITISH MUSEUM (NATURAL HISTORY): 150 grasses from South America (55810: exchange).

LONG, The Misses, Washington, D. C.: 8 specimens of lace and embroideries (55872); 65 articles mainly worn and used in the "sixties" (56711). Loan.

LOWE, H. N., Long Beach, Cal.: Crab, *Galathaea californiensis* (56562); 8 marine shells from Alaska and 30 land shells from California and Lower California (56567); 4 specimens of crab, *Randallia ornata* (56713: exchange).

LUDLOW, Dr. CLARA SOUTHMAYD, Washington, D. C.: Daguerreotype of Ann Mary Hunt Ludlow (the donor's mother), taken about 1848, daguerreotype of Ada Schenck Hunt, taken about 1840, and a silver spoon of 1850—additions to "The Sutphen-Schenck-Hunt Memorial Collection" (55659; 55816); insects from the Philippine Islands (56622).

LUNELL, DR. J., Leeds, N. Dak.: 8 plants from North Dakota (55937).

LYMAN, V. A., Necaxa, Puebla, Mexico: Specimen of tailed whip-scorpion, *Mastigoproctus giganteus*, and a millipede (55862).

LYNAM, Rev. JOSEPH P., S. J., Stann Creek, British Honduras: 12 bats and a beetle, 4 specimens of starfish, *Orcaster reticulatus*, a snake, *Coniophanes imperialis*, head of a Tomago snake, *Bothrops atrox*, several screw worms and 15 ferns, collected in British Honduras (55772; 55925; 56137; 56235).

LYON CYPRESS LUMBER COMPANY, Garyville, La.: 2 specimens of best grade mottled cypress lumber (57065: purchase).

LYON, DR. M. W., jr., Washington, D. C.: Nest and 3 eggs of Carolina wren, *Thryothorus ludovicianus*, from Great Falls, Va. (56965).

MCADORY, MRS. E. L., San Francisco, Cal.: 2 cut glass candle globes (55746: loan).

MCATEE, W. L., U. S. Department of Agriculture, Washington, D. C.: 62 specimens of reared Hymenoptera

MCATEE, W. L.—Continued. from Plummer's Island, Md., and vicinity (56493).

MACBETH-EVANS GLASS COMPANY, Charleroi, Pa.: Blown glass series comprising a tank furnace, pot furnace, glass worker's tools, and crude, intermediate and finished products of the art (57045); glory-hole model and pot arch model (57114).

MCALLIE, Prof. S. W., State geologist, Atlanta, Ga.: 14 specimens of *Goniatites* from the Subcarboniferous shales of Floyd County, Ga. (56147); Tertiary limestone containing about 200 specimens of bryozoans (56215).

McCLELLAND, MRS. E. L., Washington, D. C.: Collection of shawls, lace, jewelry, etc., embracing 39 specimens (56845: loan).

McDERMOTT, F. ALEX., University of Pittsburgh, Pittsburgh, Pa.: Beetle, *Gibbium psyllodes* (55995).

MCELROY, MRS. JOHN E., Albany, N. Y. (through Mrs. Julian James): Camel's-hair shawl (57100: loan).

McGEHEE, LEE, Mason, Tex.: Large topaz crystal from Texas (56388: purchase).

MCILHENNY, E. A., Avery Island, La. (through Bureau of Fisheries): 2 specimens of *Rangia flexuosa*, dug from a canal in a marsh bordering on Vermilion Bay, La. (56375).

MACKENSEN, Prof. BERNARD, San Antonio, Tex.: 8 living specimens of Cactaceae from Texas (56140); living specimen of *Opuntia davisii* from Texas (56358: exchange); 4 photographs of Cactaceae (56949).

MCALAIN, MISS ALICE C., Adamana, Ariz.: Charred fragments of ancient textiles from pueblo ruins near Adamana, and specimens of fossil wood and supposed fossil fruit (56439).

MCLANE, MRS. ALLAN, Washington, D. C.: 3 bonnets, period of 1850, and a fur muff (56999: loan).

MCLEAN, JOHN R., Washington, D. C.: Cloth-of-gold dress and a coat trimmed with jewels, worn by the

MCLEAN, JOHN R.—Continued.
late Mrs. John R. McLean (56791: loan).

MCLEES, FRANK, AND BROTHERS, New York City: 51 examples of cerotype printing and 4 of ceroplate printing (56391).

McMAHON MUSEUM. (See under Quetta, Baluchistan, India.)

MACMANUS, GERALD O'C., Corpus Christi, Tex.: Gold medal of Napoleon I, commemorating the birth of the "King of Rome" in 1811 (55918).

MCNEAL, J. G., Sebring, Fla.: Tailed whip-scorpion, *Thelyphonus giganteus*, and "worm lizard," *Rhineura floridana*, from Florida (55793; 56516).

MCNEILL, L. H., Mobile, Ala.: Fern from Alabama (55692).

MACOUN, JOHN, Sidney, British Columbia: 203 specimens of cryptogams from Canada (57027: purchase).

MAINE FELDSPAR COMPANY, Brunswick, Me.: 3 large specimens of pegmatite and about 100 hand specimens of feldspar, from the quarries at Tops- ham, Me. (55893).

MANILA, BUREAU OF EDUCATION. (See under Philippine Islands, Government of the.)

MANILA, BUREAU OF SCIENCE. (See under Philippine Islands, Government of the.)

MANILA, UNIVERSITY OF THE PHILIPPINES. (See under Philippine Islands, Government of the.)

MARETT, R. R., Exeter College, Oxford, England: Flint implements and shop refuse of flint work, from two paleolithic caves in Jersey (56924).

MARINE BIOLOGICAL LABORATORY, Woods Hole, Mass.: 12 specimens representing 9 species of invertebrates (55722: purchase); crabs, *Hyas* and *Lithodes*, from off the shore at Gloucester, Mass. (56272); shrimp, *Glypturus acanthochirius*, and some mollusks (56574); 27 specimens representing 13 species of crustaceans

MARINE BIOLOGICAL LABORATORY—Con. and actinians, chiefly from Jamaica, 20 fishes from Jamaica and 2 from Gloucester, and 4 species of mollusks from Florida (56769: exchange).

MARKS, J. N., Kingsland, Ark.: A drilled stone tablet or "gorget" from Tennessee (55940).

MARSH, G. E., Georgetown, Colo.: Plant, *Aquilegia saximontana*, from Colorado (55763).

MARSHALL, ERNEST B., Laurel, Md.: Mole, *Scalopus aquaticus*, pileated woodpecker, *Phlaeotomus pilicatus*, 3 specimens of towhee, *Pipilo erythrorthalmus*, 2 specimens of Cooper's hawk, *Accipiter cooperi*, and common weasel, *Mustela nova- boracensis*, from Maryland (56014; 56055; 56331; 56682; 56884; 57092); skull of an otter, *Lutra canadensis*, and of a muskrat, *Ondatra zibethica macrodon*, from North Carolina (56455).

MARSHALL, GEORGE, U. S. National Museum: Skull of *Equus caballus* (55917); fox squirrel, *Sciurus niger neglectus*, pine mouse, *Pitymys pincitorum*, American coot, *Fulica americana*, and white-breasted nuthatch, *Sitta carolinensis*, from Maryland (56186; 56325; 56329).

MARSHALL, H. B., Halifax, N. C.: Swamp rabbit, *Sylvilagus*, from Halifax (56086).

MARTIN, Dr. HENRI, Paris, France: Collection of paleolithic relics from La Quina (Charente), France, received through Dr. Charles Peabody, Cambridge, Mass. (55671); cast of the La Quina skull (55712: exchange).

MARVIN, W. E., Yuma, Ariz.: Specimen of *Asclepias* from Arizona (56064).

MASON, J. N., Lometa, Tex.: Specimen of celestite (56973).

MASON VALLEY MINES COMPANY, Mason, Nev. (through Mr. Victor C. Heikes, Salt Lake City, Utah): A

MASON VALLEY MINES COMPANY—Con. specimen of copper ore from Mason Valley mine, Yerington District, Lyon County, Nev. (56785).

MASSACHUSETTS AGRICULTURAL EXPERIMENT STATION, Amherst, Mass.: Specimen of a geometrid, *Therina pellucidaria*, and 2 specimens of the spruce bud worm, *Tortrix fumifera* (55813).

MATHES, K. B., Batavia, N. Y.: 22 specimens of Cretaceous fossils (56619: exchange).

MATHIESON ALKALI WORKS, Saltville, Va. (through Dr. O. P. Hay, Washington, D. C.): Specimens of *Elephas*, *Mastodon* and *Bison* (56915).

MATIEKKA, Prof. J., Prague, Bohemia (through Dr. Aleš Hrdlička): 10 recent skulls from Mělník, Bohemia; and 6 skeletons, with 2 additional skulls (10th to 11th century, A. D.), from Rousovice, near Mělník (55888: collected for the Museum).

MATTHEWS, Mrs. CAROLINE, Washington, D. C.: 19 Navaho blankets and 3 models of blanket frames, collected by the late Dr. Washington Matthews between the years 1880 and 1884; 6 miscellaneous Indian specimens (57003: loan).

MAXON, WILLIAM R., U. S. National Museum: 400 ferns from North America (55964).

MEARNS, Lieut. Col. EDGAR A., U. S. Army (retired), U. S. National Museum: Salamanders from Virginia and the District of Columbia (55968; 56074; 56172; 56212; 56768); marine, land and fresh-water shells, skin of bob-white, *Colinus virginianus*, and skull of *Anas rubripes*, from Virginia (56100; 56155; 56176); water-worn pebble (pseudo-antiquity), from the District of Columbia (56300); 1577 skins, 48 skeletons and 780 eggs of birds, shells, plants, insects, skin and skull of a mammal, and a few geological specimens, from New York, Minnesota, Arizona, Europe and Asia (56311).

MEARNS, Mrs. EDGAR A., Washington, D. C.: Collection of plants and 150 bird skins, from New York, Arizona and Minnesota (56314).

MELICHAR, Dr. L., Brünn, Austria: 33 named Homoptera (56497: exchange).

MELL, C. D., Forest Service, Washington, D. C.: 7 plants from British Guiana and Trinidad (56827).

MERRIAM, Dr. C. HART, Washington, D. C.: Specimens of *Amnicola* from an ant hill in an old lake bed in Skull Valley, Utah (56040).

METCALF, WILLIAM, Mystic, Iowa: 3 fossil shells, cast of a plant stem, and a specimen of *Edestus crenulatus* (56579).

MICHELSON, Dr. TRUMAN, Bureau of American Ethnology: 8 ethnological specimens from the Fox Indians (55858: purchase).

MICHIGAN, UNIVERSITY OF, MUSEUM OF ZOOLOGY, Ann Arbor, Mich. (through Dr. Alexander G. Ruthven, director): Lizard, *Basiliscus*, from Santa Marta Mountains, Colombia, South America (56194); batrachian, paratype of a new species, from Colombia (56832).

MÍČKA, FRANK, U. S. National Museum: Skeleton of an adolescent female Sioux Indian, excavated at Fort Yates, N. Dak. (55956).

MIGEL, M. C., & COMPANY, New York City: 8 sample cuts of printed pussy willow taffeta, first examples of "Ad Hoc" printing in the United States (57026).

MILLER, GERRIT S., jr., U. S. National Museum: Skull of *Microtus pennsylvanicus*, specimen of shrew, *Cryptotis parva*, and of Cooper's hawk, *Accipiter cooperi*, and a crayfish, from Virginia (55854; 56122; 56185; 56737); 2 turtles from Mississippi (56517).

MILLER, Dr. HUGO H., Bureau of Education, Manila, P. I.: Mandayan skirt cloth (56912: purchase).

MILLER, J. F. D., Macon, Ga.: Pocket-gopher, *Geomys*, from Mitchell County, Ga. (56203).

MILLS NOVELTY COMPANY, Chicago, Ill.: Violano-Virtuoso (home style, model of 1914) and 6 music rolls (56968).

MILLWARD, RUSSELL HASTINGS, Belize, British Honduras: About 5,300 specimens of small marine shells from Isla de Mujeres, Quintana Roo, Yucatan, Mexico (56216).

MISSOURI BOTANICAL GARDEN, St. Louis, Mo.: 1 specimen and 5 photographs of *Opuntia* (56101); 1,075 plants from the herbarium of Henry Egert (56271). Exchange.

MITCHELL, MISS ELLA BELLE, Chana, Ill.: 6 white shell arrowpoints found in Pine Rock Township, Ogle County, Ill. (56076).

MITCHELL, Hon. J. D., Victoria, Tex.: 990 specimens of *Bulimulus* and *Glandina*, from 43 localities in Texas (56190); 20 earthworms from Guadalupe River bottom, Victoria County, Tex. (56806).

MITCHELL, J. W., East Falls Church, Va.: Snake, *Diadophis punctatus*, from Fairfax County, Va. (55904).

MITCHELL, MASON, American consul, Apia, Samoa: Dried specimen of pectoral rail, *Hypotanidia philippensis* subspecies, and a bird egg, from Samoa (55820); 5 bird skins from Samoa and the Ellis Islands (56469).

MITSU BISHI COMPANY, Tokyo, Japan: Model of the Takashima coal field, received at the close of the Louisiana Purchase Exposition, 1904 (57124).

MITSUI & CO., LIMITED, New York City: Book (5 pounds) of the best grade of raw Japanese silk (56644).

MITZMAIN, M. B., Washington, D. C.: 25 insects (56770).

MOGI, MOMONOI AND COMPANY, New York City: 11 samples of Japanese printed cotton toweling and napery (57005).

MOHEGAN GRANITE COMPANY, New York City: A slab of dark Mohegan granite; and 2 5-inch cubes, one each of light and dark Mohegan granite (56144).

MONNET, PAUL, French consulate, San Francisco, Cal.: 62 plants from California and Nevada (56633: exchange); 6 living specimens of Cactaceae from Arizona (57136).

MONTAGUE, P. D., Gonville & Caius College, Cambridge, England (through Prof. J. Stanley Gardiner): 28 crustaceans from the Monte Bello Islands, Australia (56509: exchange).

MOODY, DR. PRICE, Bartlett, Ohio: Specimen of 2-headed snake, *Coluber*, from Ohio (55792).

MOORE, BENSON B., Washington, D. C.: 3 paintings in oil—Interior, attributed to Adrian von Ostade, Interior, by L. Fissette, and "Might is Right," by Z. Noterman (56795: loan).

MOORE, CLARENCE B., Philadelphia, Pa.: 2 masses of galena containing a deposit of lead carbonate which was used by the aborigines for paint, obtained from a mound near Boyd's Landing, Hardin County, Tenn. (56604); 5 skeletons and 2 skulls, from along the Tennessee River (56843).

MOORE, DR. RILEY D., U. S. National Museum: 19 bird skins and 43 eggs, from St. Matthews Island, Bering Sea (55897); 631 ethnological specimens from Alaska (55962). Purchase.

MORGAN, HON. EDWARD M., Postmaster, New York City (through Hon. Frank H. Hitchcock): A silver cup—the first article sent by parcel post in the United States (55726).

MOSIER, CHARLES A., Little River, Fla.: 70 Diptera, mainly from Florida, and 19 Hymenoptera (56505; 56540); 17 Hymenoptera parasites from Buena Vista, Fla., bred from katydid eggs (56716).

MUNDER, NORMAN T. A., AND CO., Baltimore, Md.: 14 photomechanical relief prints (56132).

MUNICH, GERMANY, ZOOLOGISCHE SAMMLUNG UND ZOOLOGISCHES INSTITUT: 22 recent Japanese crinoids (57049: exchange).

MUNROE, MISS HELEN, Smithsonian Institution: An example of photomechanical intaglio printing—night scene, after a drawing (56133).

MURPHY, THOMAS, U. S. National Museum: Stone ball (pseudo-antiquity), found by the donor in a clay bank, Washington, D. C. (56301).

MURRAY, CHARLES, Washington, D. C.: Tortoise (56048).

MUSEO NACIONAL. (See under San José, Costa Rica.)

MUSEUM OF COMPARATIVE ZOOLOGY. (See under Cambridge, Mass.)

MUSEUM, GEOLOGISCHES INSTITUT DER UNIVERSITÄT BRESLAU. (See under Breslau, Germany.)

MUSÉUM D'HISTOIRE NATURELLE. (See under Paris, France.)

MUSEUM OF VERTEBRATE ZOOLOGY, UNIVERSITY OF CALIFORNIA. (See under California, University of.)

MUSEUM FÜR VÖLKERKUNDE. (See under Leipzig, Germany.)

MUSEUM OF ZOOLOGY, UNIVERSITY OF MICHIGAN. (See under Michigan, University of.)

MYERS, P. R., U. S. National Museum: 32 insects (55652).

NADAY & FLEISCHER, New York City: 5 2-yard lengths of linens (56930).

NATIONAL ACADEMY OF SCIENCES, Washington, D. C. (through Dr. Whitman Cross, treasurer): Bronze replica of the James Craig Watson medal, awarded to Sir David Gill for researches in astronomy, 1900; bronze replica of the Alexander Agassiz medal, awarded to scientific men in any part of the world for original contributions to the science of oceanography; bronze replica of the Henry Draper medal, awarded to Henri

NATIONAL ACADEMY OF SCIENCES—Con. Deslandres for discoveries in astronomical physics (56201: deposit).

NATIONAL ASSOCIATION OF PORTRAIT PAINTERS (through Mr. Earl Stetson Crawford, secretary, New York City): 25 paintings in oil, embodying examples by John W. Alexander, Cecilia Beaux, Frank W. Benson, Adolphe Borie, William M. Chase, Brenetta Herrman Crawford, Earl Stetson Crawford, Howard Gardiner Cushing, Lydia Field Emmet, Charles Dana Gibson, Victor D. Hecht, Robert Henri, Henry Salem Hubbell, John C. Johansen, DeWitt M. Lockman, George Luks, Ellen Emmet Rand, S. Montgomery Roosevelt, William T. Smedley and Irving R. Wiles (56694: loan for special exhibition).

NATIONAL CASH REGISTER COMPANY, Dayton, Ohio: 6 examples of newspapers printed on the Merten's rapid rotary intaglio press (55999); 5 specimens of rapid rotary intaglio, consisting of 3 miniature copies of The National Cash Register Weekly and 2 copies of insert for The Arts and Crafts Magazine (56344).

NATIONAL SOCIETY OF THE COLONIAL DAMES OF AMERICA, Washington, D. C.: Wedding certificate of Jonathan Copeland and Mary Nicholas, November 3, 1756, and silver tablespoon, wedding gift to Lydia Allen, April 22, 1773, lent to the Society by Mrs. Silas Casey; and 2 silver spoons, lent to the Society by Miss Sophie Pearce Casey (56718); miniature of Catherine, Duchess of Gordon, lent to the Society by Miss Julie G. McAllister; piece of brocade from the wedding gown worn by Margaret Colton of Springfield, Mass., on her marriage to Joseph Frost of Newcastle, N. H., October 20, 1744, lent to the Society by her great-great-granddaughter, Mrs. Clarence Winthrop Bowen (56729); 42 reliques from the Colonial Dames of Massachusetts (56794); saucer, part of a set pre-

NATIONAL SOCIETY OF THE COLONIAL DAMES OF AMERICA—Continued.
 sented by the State of Virginia to Thomas Ap Catesby Jones, plate which belonged to Chief Justice Marshall, and a pitcher which belonged to James Craik, surgeon in Braddock's Army, lent to the Society by Miss Rose M. MacDonald (56802); portrait (painted on ivory) of the Right Rev. Bishop White, first bishop of Pennsylvania, lent to the Society by Mrs. C. Albert Hill; silver strainer of 1763, lent to the Society by Mrs. Ernest H. Pringle; knife, fork, 2 silver bottle corks, 2 silver bottle labels and a silver mug, lent to the Society by Mrs. Maurice Augustus Moore (56897); 4 historical documents issued in Massachusetts during the colonial period, and dated, respectively, 1738, 1744, 1764 and 1771, lent to the Society by Miss Elizabeth Perkins (57031). Loan.

NATURHISTORISKA RIKSMUSEUM, BOTANISKA AFDELNING. (See under Stockholm, Sweden.)

NELSON, Prof. AVEN, Laramie, Wyo.: 2 living specimens of Cactaceae from Wyoming (56872; 56980).

NELSON, N. C., Imperial, Cal.: Moth, *Apantesis proxima* (56114).

NEVADA, UNIVERSITY OF, Reno, Nev. (through Prof. P. B. Kennedy): 3 living specimens of *Opuntia pulchella* and 13 specimens of Chenopodiaceae, from Nevada (56184; 56224). Exchange.

NEW YORK BOTANICAL GARDEN, Bronx Park, New York City: 40 living specimens and 65 herbarium specimens of Cactaceae, chiefly from the West Indies; also 9 photographs of Cactaceae (55650; 55693; 55800; 56307; 56440; 56665; 56734; 56824; 56873); 1,180 plants from the Virgin Islands and Curaçao (55880); 1,669 miscellaneous plants chiefly from the West Indies (55693; 55945; 56363; 56486; 56658; 56775; 56873); 562 plants, chiefly from Africa, from the Otto Kuntze Herbarium (56050). Exchange.

NICHOLAS, DR. FRANCIS C., New York City: 14 specimens of ore from the Copete Mine, near Carbo, Sonora, Mexico, illustrating the development of iron ores from pyrite (56113).

NIELSEN, DR. T. C., Copenhagen, Denmark (through Dr. Adam Giede Böving): Specimens of *Agromyza carbonaria* and their work (56330).

NIGHTINGALE, REV. ROBERT C., Beechamwell Rectory, Swaffham, England: A pierced brass kitchen spoon which was in use between the years 1760-1800 (56521).

NISBET, W. W., St. Louis, Mo.: 2 bronze medals, sent from France to be sold as souvenirs at the Louisiana Purchase Exposition, St. Louis, 1904 (56906).

NOE, WILLIAM, Langdon, D. C.: Specimen of young cardinal, *Cardinalis cardinalis*, with four legs (56864).

NORRIS, J. PARKER, JR., Philadelphia, Pa.: Egg of *Lagopus rupestris reinhardi* from Labrador (56817).

OLDROYD, MRS. T. S., Long Beach, Cal.: About 500 specimens of land and marine shells from California (56811).

OLMSTED, MISS HELEN A., U. S. National Museum: Specimen of yellow-bellied woodpecker, *Sphyrapicus varius* (55985); 4 recent United States coins (56430).

ORCUTT, CHARLES R., National City, Cal.: Invertebrates and shells from various localities, chiefly on the western coast of Mexico (55989; 56013).

OPREN, MRS. ADELA E., Enniscorthy, Ireland: 51 flower studies in water color, painted by the late Miss Adelia Gates (56710).

OSGOOD, MISS SUSAN E., Salem, Mass. (through Miss L. L. Lander): Dress, kid slippers, fan and pearl beads, which were worn by Mrs. Abigail Adams, wife of President John Adams (1797-1801) (57082).

OVER, C. M., Goodsprings, Nev.: A sample of cuprodesclozite (55911).

OVERMAN, C. I., U. S. Naval Hospital, Las Animas, Colo.: 2 butterflies (56491).

OWEN, Maj. W. O., U. S. Army (retired), Washington, D. C.: 4 specimens of *Unio complanatus* from a small creek emptying into the Potomac River near Lock No. 7, a short distance from Cabin John (56073).

PACIFIC GEM COMPANY, Los Angeles, Cal.: 6 specimens of labradorite, "goldstone." 3 diamond cut and 3 cabochon cut (56536: purchase); samples of labradorite, "goldstone," uncut (56605).

PACIFIC MILLS, Lawrence, Mass. (through Lawrence and Company, Boston, Mass.): Samples of woolen goods (55777).

PALERMO, ITALY, ROYAL BOTANICAL GARDEN: Living specimen of *Borzicactus* (57134: exchange).

PALMER, WILLIAM, U. S. National Museum: 9 specimens of fishes, including 2 each of *Micropogon undulatus*, *Opsanus tau*, *Orthopristis chrysopterus* and *Spherooides maculatus* and 1 specimen of *Meuticirrus saxatilis*, all from Chesapeake Bay (55832; 56454); red bat, *Nycterus borealis*, and 2 opossums, *Didelphis virginiana* (56334); 23 birds from Virginia, District of Columbia and the vicinity of Washington (56355; 56920; 57009); portions of skulls, jaws and vertebrae of cetaceans from the Miocene marls near Chesapeake Beach, Md. (56835).

PARIS, FRANCE, MUSÉUM D'HISTOIRE NATURELLE (through Prof. H. Leconte, directeur de l'Herbier et Laboratoire Botanique): 1,110 plants and 37 copies of plant drawings (56675: exchange).

PARISH, S. B., San Bernardino, Cal.: 1 herbarium specimen each of *Sherardia arvensis* and *Atriplex saltonensis* and 3 living specimens of *Stylophylloides*, from California (55787; 55939; 56732); 31 living specimens of succulent plants, consisting of 19 Cactaceae, 11 Crassulaceae and 1 *Agave*, from California and Coronados Island, Mexico (56123; 56262; 56787).

PARKER, R. N., Forest Research Institute, Dehra Dun, United Provinces, India: Living specimen of *Opuntia* (56786).

PARKHILL MANUFACTURING COMPANY, Fitchburg, Mass.: 85 2½-yard lengths of Toile du Nord gingham (56887).

PARROTT, P. J., New York Agricultural Experiment Station, Geneva, N. Y.: 2 specimens of *Oceanthus pini* and specimens of pitch pine showing egg punctures, in exchange; and 8 specimens of *Oceanthus* as a gift (56484).

PASSENO, PANAY, jr., Washington, D. C.: Herring gull, *Larus argentatus*, in immature plumage, from the District of Columbia (56597).

PATCHING, FRED, Revillagigedo Island, Alaska (through Bureau of Fisheries): Specimen of salamander, *Diemictylus torosus* from Alaska (56618).

PAYN, ELIAS J., Olympia, Wash.: Specimen of *Peeten caurinus* with large barnacles (56223); 5 specimens of *Panope generosa* from Olympia; shells of *Saxidomus* and *Ostrea* (57042).

PEABODY MUSEUM OF NATURAL HISTORY, YALE UNIVERSITY, New Haven, Conn.: A cast of the sacral cavity of *Stegosaurus* (56495: exchange); 150 type specimens of Silurian bryozoans and ostracods from the island of Anticosti (56765).

PEARSON, JOHN. (See under Charles Brown.)

PEARY, Rear Admiral ROBERT E., U. S. Navy (retired), Washington, D. C.: 4 gold medals presented to Rear Admiral Peary during his recent European trip, in recognition of his Arctic explorations and his discovery of the North Pole (56370: loan).

PELGRAM & MEYER, Paterson, N. J.: 4 2-yard lengths of "ratine bayadere" ribbon (56929).

PENA, Madame CARLOS MARIA DE, Uruguayan Legation, Washington, D. C.: 6 fans (56522: loan).

PENNSYLVANIA, UNIVERSITY OF, DEPARTMENT OF BOTANY, Philadelphia, Pa.: 104 specimens of Scrophulariaceae collected in the southeastern part of the United States by Mr. F. W. Pennell (55753: exchange).

PERTH, WESTERN AUSTRALIA, WESTERN AUSTRALIAN MUSEUM AND ART GALLERY: 16 specimens of recent crinoids collected by the Australian fisheries investigating steamer *Endeavour* (56958).

PHILIPPINE ISLANDS, GOVERNMENT OF THE, Manila, P. I.:

Executive Bureau: 12 postage stamps of the Philippine Islands, consisting of new color on old watermark paper, 26 centavos; and on new watermark paper, 2, 6, 8, 10, 12, 16, 20, 26, 30 centavos, and 1 and 2 pesos—received through the Bureau of Insular Affairs, War Department (56715).

Bureau of Education: Specimens of 5 grades of knotted abaca and implements for spinning and reeling cotton and abaca—received through the Bureau of Insular Affairs, War Department (57074: exchange).

Bureau of Science: 481 plants, chiefly cryptogams, from the Philippine Islands (56049); 953 plants chiefly from Guam and Indo-China (56488). Exchange.

University of the Philippines: Miscellaneous invertebrates, including mollusks (56397: exchange).

PHILLIPS, RAY, Broadwater, Va.: A fossil crab (56876: purchase).

PIERCE, HENRY HAVELOCK, Boston, Mass. (through Mr. George W. Harris, Washington, D. C.): Photographic portrait of a man (56590).

PITTIER, Prof. H., Bureau of Plant Industry, Washington, D. C.: 875 plants, including living specimens of

PITTIER, Prof. H.—Continued.

Cactaceae; 4 bats, about 20 insects, 1 crab and 2 snakes, all from Venezuela (55780; 55784; 55806; 55875; 55963); 31 plants, including 12 from the Vargas Herbarium and 16 from the Ernst Herbarium, Caracas (55970); fruit head of ivory nut palm, *Phytelephas*, from Panama (56830: collected for the Museum); 20 living specimens of Cactaceae, *Hylocereus* sp., and 2 bats, *Micronycteris*, from Panama (56892; 56960).

PITTSBURGH COAL COMPANY, Pittsburgh, Pa.: Coal mine model, received at the close of the Louisiana Purchase Exposition, 1904 (56153).

PLIMPTON, R. S., Salida, Colo.: 5 living specimens of *Opuntia* and *Echinocactus* from Chaffee County, Colo. (55695).

PONEMAH MILLS, Taftville, Conn. (through Clarence Whitman & Co., Inc., New York City): 5 specimens of cotton and silk and cotton crêpe dress goods (57137).

PORTER, T. J., & SONS, Philadelphia, Pa.: A series of small specimens of raw flax and linen yarns, and 13 samples of fine English spun cotton yarn wound on small cones (56526).

PORTLAND SOCIETY OF NATURAL HISTORY, Portland, Me.: 7 specimens of *Solemya borealis* from 20 feet of water in Portland Harbor (56451).

POST OFFICE DEPARTMENT: 28 sets of specimen stamps, etc., 10 of which are in triplicate and 6 in duplicate (approximately 8,529 specimens), received from the International Bureau of the Universal Postal Union, Berne, Switzerland (55665; 55733; 55815; 55885; 55920; 56019; 56098; 56241; 56303; 56463; 56502; 56533; 56612; 56712; 56793; 56841; 56964); 23 United States postage stamps, consisting of 5 postal savings official, 12 parcel-post, 5 parcel-post due and 1 Panama-Pacific commemorative, completing the postal savings, parcel-post, and Panama-Pacific series (56097); a complete specimen set

POST OFFICE DEPARTMENT—Continued.
(27) of the new postage and postage due stamps issued by the Chinese Postal Administration to replace the former surcharged issues (56200) : 237 specimens, consisting of 3 copies each of various denominations of current United States postage stamps, postage due stamps, stamped envelopes and newspaper wrappers (56651; 57085).

PRADO, ERNESTO NUÑEZ DEL, La Paz, Bolivia (through Dr. Albert Hale, Washington, D. C.) : Golden-headed train-bearer, *Pharomachrus auriceps*, a bird of the trogon family, from Bolivia (56595) ; a sample of medicine and a bird (57014).

PRESCOTT & WAYWELL, Paterson, N. J. : 6 mounted photographs showing preparation of warps for silk loom (56316).

PROKES, JAMES, Bridgeport, Ohio : A specimen of concretionary mica-schist (55892).

PUGSLEY, EDWIN, New Haven, Conn. : Fogerty breech-loading, magazine rifle (56859).

QUEENSLAND MUSEUM. (See under Brisbane, Queensland.)

QUEHL, DR. L., Halle (Saale), Germany : 10 living specimens of Cactaceae (55667; 56647). Exchange.

QUETTA, BALUCHISTAN, INDIA, McMAHON MUSEUM (through Hon. Henry D. Baker, American consul) : 5 specimens of minerals and ores from Baluchistan (56034).

REAGAN, A. B., Nett Lake, Minn. : Fresh-water shells, representing 3 species, from Nett Lake (55770).

REESE, PROF. ALBERT M., West Virginia University, Morgantown, W. Va. : Mammals, reptiles, fishes, insects, mollusks and other invertebrates, from the Philippine Islands (56023) ; 60 small mammals in alcohol and a collection of reptiles, from Luzon, P. I. (56508). Collected for the Museum.

REID, MRS. BRUCE, Port Arthur, Tex. (through Bureau of Biological Survey, Washington, D. C.) : 5 eggs and 4 nests of the long-billed marsh wren, *Telmatodytes palustris plebeius*? from Texas (55799).

REMER, WILLIAM A., Deadwood, S. Dak. (through Mr. Frank L. Hess, U. S. Geological Survey) : A specimen of autunite (56577).

REMINGTON ARMS - UNION METALLIC CARTRIDGE COMPANY, Ilion, N. Y. : 2 sporting rifles (56721).

RENFREW MANUFACTURING COMPANY, Adams, Mass. : 10 2-yard lengths of damasks, madras, seersuckers, Devonshire cloth and Jap crêpe (56866).

REYNOLDS, J. CLAYTON, Utica, Ky. : Roughed-out blade of diabase found near Utica by the donor (56295).

RICE, ARTHUR P., Mérida, Yucatan, Mexico : Ceremonial bell excavated at Chichen Itza, Yucatan (55664) ; 6 photographs, ruin views of the cities of Chichen Itza and Uxmal, Yucatan ; also an interesting shell limestone of Tertiary age from near Mérida (56781).

RICHARDS, A. G., Albany, Wyo. : Specimens of allanite and gangue from near Albany (55855; 56029).

RICHARDS, DR. T. W., U. S. Navy, Washington, D. C. : 2 bird skins from Samoa (56056).

RIDGEWAY MICA COMPANY, Pittsburgh, Pa. : 6 specimens of mica (56024).

RIDGWAY, CHARLES L., Boston, Mass. : Model of the Ridgway revolving battery (56243).

RIDGWAY, ROBERT, U. S. National Museum : 27 birds and 3 eggs from Olney, Ill. (57007).

RIDGWAY, DR. T. E., Washington, D. C. : Photograph of a group of engraved portraits of early English historical personages (56437).

RILEY, J. H., U. S. National Museum : Specimen of *Lampsilis radiatus*, 7 squirrels, *Sciurus hudsonicus loquax*, a chipmunk, *Tamias striatus striatus*, and 6 birds, including an in-

RILEY, J. H.—Continued.

digo bunting, *Passerina cyanea*, and a sharp-shinned hawk, *Accipiter velox*, all from Virginia (56105; 56277; 56290; 56356; 56921); 25 bird skins (57008).

ROBERTS, Dr. H. W., Ottumwa, Iowa: Beetle, the "eyed elater" (57016).

ROBERTSON, GEORGE, University of Redlands, Redlands, Cal.: A slab containing specimens of a fossil brachiopod, *Rhynchonella whitneyi?*, from the Lower Cretaceous, Corona, Cal. (55715).

ROBERTSON, W. R. B., University of Kansas, Lawrence, Kans.: 2 specimens of Orthoptera representing the species *Jamaicana subguttata* (56093).

ROBINSON, Col. WIRT, U. S. Army, West Point, N. Y.: Collection of named beetles, mainly from Denmark (56816).

ROBINSON, Miss W. J., Poughkeepsie, N. Y.: Fern, *Schizostegi lydgatei*, from Hawaii (55877).

ROCHESTER BUTTON COMPANY, Rochester, N. Y.: 10 boxes of material illustrating the manufacture of buttons from vegetable ivory (56747).

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, New York City: 62 photomicrographs showing the use of photography in laboratory research work at the Rockefeller Institute (56211).

ROEDER, GEORGE M., Swetman, Va.: 100 specimens, representing 13 species, of land shells from Virginia and Maryland (56468).

ROIG, Dr. MARIO SÁNCHEZ, Havana, Cuba: 9 crustaceans from Cuba (55822); 4 specimens of isopods representing 3 species (56108).

ROSE, Dr. J. N., Carnegie Institution of Washington, Washington, D. C.: Snake from Texas (56107).

ROSENBERG, W. F. H., London, England: 15 bird skins from Africa (55731: purchase).

ROSS RIFLE COMPANY, Quebec, Canada:

Ross magazine sporting rifle, model M-10 (56643).

ROTARY PHOTOGRAVURE COMPANY, INC., Passaic, N. J.: 77 examples of rotary intaglio printing (56686).

ROTHSCHILD BROTHERS & COMPANY, New York City: Series of specimens illustrating the manufacture of pearl and vegetable ivory buttons (57044).

ROUSSELET, CHARLES F., London, England: 26 microscopic slides of Rotifera (9th and 10th installments) (56257; 56925). Purchase.

ROWELL, JOSEPH C. N., Neppel, Wash.: 2 fishes—lake chub, Columbia chub, or white chub, *Rutilus bicolor* (56654).

ROYAL BOTANIC GARDEN, Sibpur. (See under Calcutta, India.)

ROYAL BOTANICAL GARDEN. (See under Palermo, Italy.)

ROYAL ONTARIO MUSEUM OF MINERALOGY. (See under Toronto, Canada.)

RULLMAN & WILSON. (See under Beaver Dam Marble Co.)

RUNYON, E. G., Washington, D. C.: 3 leeches from Macomb County, Mich. (56006).

RUSSELL, W. S., Ventura, Cal. (through U. S. Geological Survey): Specimen of massive crystalline colemanite from the mine of the Russell Borate Mining Company (56249).

RUTH, Prof. ALBERT, Polytechnic, Tex.: 91 plants from Texas (55975; 56183).

RUTOT, Prof. A., Musée Royal d' Histoire Naturelle de Belgique, Brussels, Belgium: 51 originals and 17 casts of ancient stone implements from various parts of Belgium; also an original neolithic skull from Boussu (Valley of the Haine), Belgium (55867); 74 stone implements from Belgium, consisting of 28 Chellean, 17 Acheulian and 29 Moustierian specimens (56614). Exchange.

RUXTON, PHILIP, INC., St. Paul, Minn.: 56 specimens used in the manufacture of printing ink, and 12 photographs (57095).

SAADI, JOHN E., Allentown, Pa.: 7 twin crystals of staurolite from Henry County, Va. (56857).

SAALBURG, CHARLES W., New York City: 22 specimens of rotary and machine - printed photogravures (56384); 6 magazines containing examples of rapid rotary intaglio work: *Country Life in America*, November, 1906; *Printing Art*, June, 1908; and *The Century Magazine* for December, 1906, June, September, and December, 1907 (57080).

SACIETT, JOSEPH, U. S. Naval Hospital, Brooklyn, N. Y.: 5 larvae of *Automeris* sp. (56602).

SADTLER, DR. SAMUEL P., Philadelphia, Pa. (through U. S. Geological Survey): A crystal of sulphohalite (57050).

ST. PETERSBURG, RUSSIA, KAISERLICHER BOTANISCHER GARTEN PETER DES GROSSEN: 41 plants from Brazil (56572); 2 specimens of *Lycopodium* (56888). Exchange.

SAN JOSÉ, COSTA RICA, MUSEO NACIONAL (through Dr. Anastasio Alfaro): Rocks and Pliocene fossils from Costa Rica (56808); 8 living specimens of *Rhipsalis* (56868; exchange).

SANTWAY, DR. FREDERICK L., Theresa, N. Y.: A minnow, *Notropis atherinoides* (55738).

SARGENT, ARTHUR H., Kansas City, Mo.: A modern terra cotta oriental pipe (56296).

SARGENT, PROF. C. S., Jamaica Plain, Mass.: 1,580 plants collected in China by Mr. E. H. Wilson (56305; purchase).

SATTERLEE, MRS. JANE L., Washington, D. C.: Dress worn by Mrs. Satterlee, wife of Henry Y. Satterlee, first Bishop of Washington (57000; loan).

SAVAGE ARMS COMPANY, Utica, N. Y.: Magazine sporting rifle (56714).

SCHLEGEL, MISS MATHILDE, East Aurora, N. Y.: Specimen of wood mouse, *Peromyscus leucopus*, from East Aurora (56089).

SCILÜTER, WILHELM, Halle a. Saale, Germany: 18 mammal specimens (55851); skin and skull of *Genetta*, *Cricetomys* and *Cricetus* (56242). Purchase.

SCHMID, EDWARD S., Washington, D. C.: Blue and yellow macaw, *Ara ararauna*, in the flesh; also a skeleton of the same species (55683; 56957); parrot, *Amazona auropalliata*, and a species of *Amazona* (55884; 56289); Cuban parrot, *Amazona leucocephala* (55896); Tovi parakeet, *Brotogeris jugularis*, Russian spermophile, and a white-armed cotton-head monkey, *Scenocebus mettliculus* (55905); Angora rabbit, *Oryctolagus* (56008); red-shouldered hawk, *Buteo lineatus* (56652); guinea pig, *Cavia* (57091).

SCHMITT, MR. (See under C. Bües.)

SCHROEDL, GUIDO, Baltimore, Md.: Carved and painted wooden image from Kawieng Island, Bismarck Archipelago, and a ceremonial carved adz from Hervey Island (56909); bows, arrows and spears from Melanesia (56988). Loan.

SCHÜCK, DR. V., Prague, Bohemia: 3 invertebrate fossils, 2 mammals and a snake, from northern Zululand, South Africa (56339; 57058); 8 snakes, 21 entire mammals in formalin, 4 heads of mammals in formalin and 16 skulls of mammals, from the Ubombo district, northern Zululand (56351). Collected for the Museum.

SCIENCE AND AGRICULTURE DEPARTMENT. (See under Georgetown, British Guiana.)

SEAL, WILLIAM P., Delair, N. J.: 12 eggs of pine snake (55669).

SEAMON ASSAY COMPANY, El Paso, Tex.: 2 specimens of copper ore (56881; purchase).

SEBASTIAN, RICHARD, U. S. National Museum: Abnormal egg of a domestic fowl (55907); snake from Rock Creek, D. C. (57011).

SENCKENBERGISCHE NATURHISTORISCHES MUSEUM. (See under Frankfort (on-the-Main), Germany.)

SETON, ERNEST THOMPSON, Greenwich, Conn.: 20 small mammals from England and 4 from Connecticut (56738); a Mexican bridle of the old-fashioned type, made of finely cut and plaited rawhide (56757). Exchange.

SHANNON, R. C., Bureau of Entomology, Washington, D. C.: Approximately 1,668 insects, mostly Diptera, from Virginia, Maryland and the vicinity of Washington (56128); about 315 bred Diptera, the larvae of which were chiefly collected around Washington; 12 vials containing fleas and flea larvae, pupae and eggs; 70 vials of dipterous larvae; 35 vials of miscellaneous alcoholic material, chiefly from the vicinity of Washington (56524).

SHANTZ, H. L., U. S. Department of Agriculture, Washington, D. C.: Specimen of *Battaria griffithsii* from Utah (56160).

SHAW, S. ALBERT, Hampton, N. H.: 71 specimens of Lepidoptera (56603).

SHELDON, F. B., Byron, Mich.: Specimen of tuckahoe, or Indian bread, *Pachyma cocos*, found three miles west of Ashland, Va. (56313).

SHEPHERD, E. S., Carnegie Institution of Washington, Washington, D. C.: 11 reptiles (56250).

SHERBORN, CHARLES DAVIES, London, England: 90 engraved and etched bookplates by C. W. Sherborn, including one of Her Majesty Queen Mary of England, and a line cut bookplate of Harry Roberts Carson, signed A. H. N., 1911 (55656).

SHERMAN, FREDERIC FAIRCHILD, New York City: Oil painting by Du Bois F. Hasbrouck, entitled "Autumn Landscape," presented in memory of Eloise Lee Sherman (55686).

SHERMAN, P. T., New York City: Dress sword, sash, belt, packing case and other articles which belonged to Gen. William T. Sherman (56910: loan).

SHERRIN, THOMAS V., Hampton, England: 12 rabbits, *Lepus timidus scoticus*, from Scotland, and 12 rabbits, *L. europaeus occidentalis*, from England (56617: purchased from the Harrison fund).

SHIPPY, N. D., Acton, Cal.: 2 specimens of colemanite from mines of the Sterling Borax Company, near Lang, Cal. (55946).

SHIRLAW, MRS. FLORENCE M., New York City: 3 paintings in oil, "The Inn, Germany," "Study Head—Madam Capri," "Bell Foundry, Germany," and a pastel, "Easter Morning," by Walter Shirlaw; portrait sketch in oil of Walter Shirlaw, by Frank Duveneck (56116).

SHOEMAKER, CLARENCE R., U. S. National Museum: About 100 amphipods and isopods from Chesapeake Beach, Md. (57034).

SHUFELDT, DR. R. W., Washington, D. C.: Skin and photograph of white-armed cotton-head monkey *Scenocebus meticulus* (56072; 56229); skin and skeleton of a Russian spermophile, *Citellus citellus* (56457); nest and 3 eggs of cardinal, *Cardinalis cardinalis*, from Maryland (56478); young hoatzins, *Opisthocomus cristatus*, skeletal material in alcohol (56560).

SHUFF, B. E., Richardson, Alaska: A sample of gold ore from Alaska (55776).

SIBPUR, INDIA, ROYAL BOTANIC GARDEN. (See under Calcutta.)

SILVESTRI, DR. F., Portici, Italy: 22 specimens of parasitic Hymenoptera representing the species *Muscidi-furax raptor* (55942).

SKINNER, A. H., Demopolis, Ala.: Larva of the imperial moth, *Basi-
lona imperialis* (55773).

SKINNER, WILLIAM, & SONS, Holyoke, Mass.: 3 2-yard lengths of satin (56703).

SLATER, MRS. ELSIE McELROY, El Paso, Tex.: 4 photographs of New Mexican plants (56378).

SLATER, WILLIAM A., Washington, D. C.: 19 paintings (56986: loan).

SMART, J. A., U. S. National Museum: Skull of a woodchuck from Fairfax County, Va. (55990).

SMITH, Prof. FRANK, University of Illinois, Urbana, Ill.: 3 specimens in alcohol and 17 slides, representing 3 species of earthworms (56146); 2 land shells from Guatemala and 2 fresh-water shells from Michigan (56568).

SMITH, Rev. F. J., Progreso, Yucatan, Mexico: 15 specimens of fossil shells from Yucatan (56620).

SMITH, Dr. HUGH M., Bureau of Fisheries, Washington, D. C.: A Savage military revolver (56145: loan); about 100 specimens of land and marine shells from Florida (56425).

SMITH, H. O., Juneau, Alaska (through Bureau of Fisheries, Washington, D. C.): Specimen of *Mytilus californianus* and *Ariolimax columbianus*, from McHenry Inlet, Etolin Island, Alaska (56347).

SMITH, JAMES, & SON, Astwood Bank, near Redditch, England: Hand sewing-needles showing stages of manufacture, sewing-machine needles, sail, surgeon's, knitting and netting needles, bodkins, hairpins, and fancy cases for holding needles, received from the Centennial Exhibition, Philadelphia, 1876 (56434).

SMITH, Capt. JOHN DONNELL, Baltimore, Md.: Photograph of the type specimen of *Rubus tilinceus* (56218); 12 mounted plants from Ecuador and Trinidad (57110).

SMITH, MILLARD H., Candler, N. C.: Arrowpoints and spearheads with fragments of the same, and a pierced tablet, from the vicinity of Candler (55755).

SMITH, ROBERT ATWATER, Washington, D. C.: Old grasshopper bicycle with small front wheel (55662).

SMITH & KAUFMANN, New York City: 7 2-yard lengths of warp-printed and satin-brocaded ribbons (56753).

SMITHSONIAN INSTITUTION: Specimens of wire and telegraph appliances, deposited by Mr. J. C. Vail, Morristown, N. J. (55814); diploma as Foreign Associate of the Royal Academy of Sciences, Sweden, dated Stockholm, February 12, 1902, awarded to Dr. S. P. Langley, late Secretary of the Smithsonian Institution (55929); 2 stone mortars found in the Department of Rocha, Uruguay, near Laguna Merim, and 9 small silver tubes, "bom-
billas," used in drinking maté, representative of rare types found in the River Plate region, South America, collected and presented to the Smithsonian Institution by Dr. Manuel B. Otero, Vice President of Uruguay, through the Department of State (56094); skin and skull of a moose and skin of a deer, collected by Mr. Benjamin S. Walcott and Mr. Sidney S. Walcott in British Columbia (56143); 8 boxes of fossil mollusks and 8 boxes of petrographic specimens and rock chips, collected by Mr. Chester W. Washburne in southern Patagonia; also 2 boxes of Indian relics from various parts of Patagonia, collected by Mr. Washburne (56374); a diploma awarded to the Institution by the Northwest Interstate Fair, Tacoma, Wash., 1894, for its exhibit of Indian and other photographs (56461); about 150 type specimens of Cambrian fossils, listed in Volume 57, Nos. 9 and 13, Smithsonian Miscellaneous Collections, and about 5,000 Middle Cambrian fossils for the re-

SMITHSONIAN INSTITUTION—Contd.

serve collection, from the Burgess shale of British Columbia (56877); a cardboard sheet or "Tableau en mémoire du Colonel Laussedat," containing illustrations of the theory of "Metrophotography," presented to the Institution by Mr. Emile Wenz, of Reims, France (56896); "Good Luck" souvenir received by the Institution from Col. John W. Vrooman, Herkimer, N. Y. (56908); specimen of *Peripatus geayi* collected at La Chorrera, Panama, by Mr. A. Busek (56938); personal relics of Prof. Spencer F. Baird, including instruments used in his investigations, and a damask napkin used by Napoleon at breakfast on the morning he left the island of Elba, received by the Institution as a bequest from Miss Lucy Hunter Baird (57108).

Bureau of American Ethnology: 8 fragments of pottery found in an excavation at Swaffham, England, and presented by Rev. Robert C. Nightingale (55735); a small collection of pottery fragments and 3 small beads, found in a shell-bank near Port Arthur, Tex., and presented to the Bureau by Mrs. Bruce Reid (55756); 150 Cherokee medical plants collected by Mr. James Mooney in North Carolina (55971); parts of 5 skeletons, 3 complete skulls and fragments of 2 infant skulls, from a burial cist in a cave about 20 miles south of Grant, N. Mex. (56134); 31 ethnological objects of the Cherokee and Catawba Indians, collected by Mr. James Mooney (56312); 6 photographs of Aztec antiquities, purchased from Mr. W. W. Blake of Mexico City, Mexico (56609); an arrowpoint found on the North Fork of the Roanoke River, about 3 miles from Blacksburg, Va., by Prof. Otto C. Burkhardt and presented by him to the Bureau (56679); a stone phallus from Mesa Verde, Colo., presented to the Bureau by Mr. H. C. Lay, Telluride, Colo. (56719).

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National Museum, collected by members of the staff: Bartsch, Paul: A crayfish and salamanders, from Virginia (55901); lizard from Garden Key, Tortugas (55921); shrew, *Sorex personatus*; cotton-tail rabbit, *Sylvilagus floridanus mallurus*; 3 specimens of white-footed mice, *Peromyscus leucopus noreboracensis*; and 10 specimens of gray squirrel, *Sciurus carolinensis carolinensis* (56401). Bassler, R. S.: About 500 specimens of invertebrate fossils from the Martinsburg shale and associated formations of West Virginia (56020). Boss, Norman H.: A collection of fossil cetacean material, including a nearly complete porpoise skeleton, a skull, several parts of skulls and jaws, and vertebræ, from the Miocene marls near Chesapeake Beach, Md. (56836). Crawford, J. C.: 169 Hymenoptera from Bethesda, Md. (55912; 55923). Gidley, J. W.: Fossil mammals from a cave deposit near Cumberland, Md. (55774; 57040). Hrdlička, Aleš: 75 plants from Peru, including several living Cactaceae (55666). Merrill, George P.: Varietal forms of peat from bog east of Pushaw Lake, Penobscot County, Me. (55736); igneous rocks from Freeport, Me., and an unknown mineral from Sanford, Me. (55861); specimens of *Clupea harengus*, *Scomber scombrus*, and *Rhombus triacanthus*, from a weir at the southern end of the Island of Springs, Sheepscot Bay, Me. (55997); rocks and minerals from a quarry west of Belmont Park, near Leesburg, Va. (56069). Miller, Gerrit S., jr.: A small lot of mammals, reptiles and crabs, from Alabama and Mississippi (56550); 4 plants from Mississippi (56733). Moore, Riley D.: 240 skulls and skeletons of the St. Lawrence Island Eskimo, collected by Dr. Moore under the joint auspices of the Panama-California Exposition and the National Museum (55869); Eskimo and Aleut skulls

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and bones, with associated artifacts (55882); 4 crabs, *Hyas coarctatus*, from St. Lawrence Island, Alaska (55928). Myers, P. R.: 60 specimens of insects (55653). Palmer, William: Jellyfish and other invertebrates from Plum Point, Md. (55969). Stejneger, Leonhard: Mammals, mollusks and plants, from Europe (56238). Wherry, Edgar T.: Rocks and minerals from a quarry west of Belmont Park, near Leesburg, Va. (56069).

National Museum, made in the Anthropological Laboratory: 1 cast each of 4 heads of Eskimos (55752); 1 cast each of a hafted maul and a hafted spade, the originals of which were found associated with the "copperfied mummy" on an island off the coast of Chile, South America (55863); 71 casts of prehistoric stone implements and objects (56017); 2 casts each of the Diego de Vargas (1692), Juan de Oñate (1606), and other inscriptions on El Morro, or "Inscription Rock," in the western part of New Mexico, made from paper squeeze matrix taken by Mr. F. W. Hodge at El Morro in 1911 (56130); 2 casts of a 3-pointed stone baton from The Dalles, Oreg., made from original lent by Hon. N. J. Sinnott (56382).

National Museum, made in the Laboratory of Mineral Technology: Coke oven model—non-by-product through type on scale 1:12 (57046); Bennington coke pile model on scale 1:12 (57047); model of gas bench, scale 1:16, after a design made by the Gas Machinery Company, Cleveland, Ohio (57048); by-product coke relief panel (57116).

National Zoological Park: Beaver, *Castor canadensis*; black bear, *Ursus americanus*; hybrid bear, *Ursus kideri-aretos*; bushbuck, *Tragelaphus gratus* (55723); skins and skulls of 2 pumas, *Felis oregonensis hippolestes* (55840); skull of a moose, *Alces americanus*, and parts of the

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skin (55894); skin and body skeleton of rhea, *Rhea americana*; also skins of long-tailed finch, *Passerina acuticauda*; red-breasted parakeet, *Psittacula fasciatus*; curassow, *Crax globicera*; Mississippi kite, *Ictinia mississippiensis*; snowy heron, *Egretta candidissima*; warbling silverbill, *Aidemosyne canans?* (55903); 5 specimens of comb lizard, *Ctenosaura*; 2 specimens of comb lizard, *Ctenosaura acanthura*; 5 specimens of banded rattlesnake, *Crotalus horridus*; 1 specimen each of ringed snake, *Chionactis annulatus*; smooth-scaled coluber, *Arizona elegans*; tree boa, *Epicrates angulifer*; alligator, *Alligator mississippiensis*; Patagonian cavy, *Dolichotis patagonica*; fallow deer, *Cervus dama*; guanaco, *Anchoncia huanacon* (55953); secretary bird, *Gypogeranus secretarius*; 2 specimens of double yellow-head parrot, *Amazona oratrix*; Brazilian cardinal, *Paroaria cucullata*; Wagler's oriole, *Icterus wagleri*; "zebra dove"; 2 specimens of bleeding-heart pigeon, *Phlogonias luzonica*; toucan, *Ramphastos* species; Derby flycatcher, *Pitangus derbianus*; banded parakeet, *Psittacula fasciata*; 2 specimens of sulphur-crested cockatoo, *Cacatua galerita*; white ibis, *Guara alba*; European flamingo, *Phoenicopterus roseus*; 2 specimens of ruddy duck, *Eidematura jamaicensis*; green jay, *Xanthoura luxuosa*; red-headed duck, *Marila americana*; European crane, *Grus cinerea*; Carolina parakeet, *Conuropsis carolinensis* (56071); skin and 2 skulls of mule deer, *Odocoileus hemionus*; skin and skeleton of Australian dog, *Canis dingo*; skin and skeleton of raccoon, *Procyon*; skull of swamp deer, *Cervus duvaucelii* (56075); 3-banded Durukuli monkey, *Aotus trivirgatus* (56259); condor, *Sarcogyps griseus*; red-breasted parakeet, *Psittacula fasciatus*; keel-billed toucan, *Ramphastos brevirostris*.

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natus (56333); Carolina parakeet, *Conuropsis carolinensis*; Swainson's hawk, *Buteo swainsoni* (56392); otter, *Lutra canadensis*; lion, *Felis leo sabakiensis*; chamois, *Rupicapra tragus*; spiny ant-eater, *Echidna aculeata*; ocelot, *Felis pardalis* (56393); crested screamer, *Chauna torquata*; sarus crane, *Antigone collaris*; bearded vulture, *Gypaetus barbatus* (56951); fallow deer, *Cervus dama*; baboon, *Papio*; red-fronted gazelle, *Gazella rufifrons*; otter, *Lutra canadensis*; lion, *Felis leo*; gnu, *Connochaetes*; ring-tail lemur, *Lemur catta*; axis deer, *Axis axis*; Panama squirrel, *Sciurus adolphei dorsalis*; African water buffalo, *Synacerus caffer radcliffei*; American bison, *Bison bison* (56959); Mexican enrasow, *Crax globicera* (56966); skeleton of tiger, *Felis tigris* (57015); specimen each of Cuban boa and gopher tortoise and 2 specimens of gila monster (57033; 57118); alcoholic specimen of a young white pelican, *Pelecanus erythrorhynchos* (57052).

SNELL, H. V., Globe, Ariz.: Samples of asbestosiform serpentine from near Globe (56943).

SNIFFEN, Gen. C. C., U. S. Army (retired), Washington, D. C.: Photograph of a garden corner taken on a winter night (56668).

SNYDER, Dr. J. O., Leland Stanford Junior University, Stanford University, Cal.: 2 stone arrowpoints, supposed to be of Ainu origin, from Aomori, Hokkaido, Japan (55687); 64 reptiles and 16 fishes, collected in California (56328).

SOLDANSKI, HANS, Berlin, Germany: 50 specimens of Coleoptera from Germany (56015); 73 specimens of Orthoptera (56414).

SOUTH DAKOTA, UNIVERSITY OF, UNIVERSITY MUSEUM, Vermilion, S. Dak.: 130 plants from South Dakota (56530).

SOUTHERN GYPSUM COMPANY, North Holston, Va. (through Mr. George W. Stose, Washington, D. C.): A large specimen of gypsum from Virginia (57068).

SOUTHERN INDUSTRIAL EDUCATIONAL ASSOCIATION, Washington, D. C. (through Mrs. A. S. Stone): Baskets and hand-woven textiles, made by Kentucky, North Carolina and Virginia mountaineers (56970: purchase).

SOUTHWEST MUSEUM, Los Angeles, Cal.: 15 bird eggs from the western part of the United States, India and Australia (56025).

SOWERBY, ARTHUR DEC., Tientsin, China: 121 mammals—119 from Manchuria, 1 from China and 1 from Mongolia (56477: collected for the Museum).

SOWERBY, G. B., Kew, near London, England: Specimen of *Protothaca philippinarum* from Japan (56284).

SPANGLER, Mrs. T. F., Zanesville, Ohio (through Mr. W. V. Cox, Washington, D. C.): 29 photographs of ruins, etc., in the southwestern part of the United States (56917).

SPEELMAN, F. S., Pueblo, Colo.: Flint arrowhead found near Taos, N. Mex. (56898).

SPENCE, FRANCIS J., Adelaide, Australia (through Mr. Frank L. Hess, U. S. Geological Survey): A specimen of carnotite on davidite (56638).

SPRINGER, E. L., Smithsonian Institution: 9 stereotype matrices (57099).

SPRINGFIELD, MASS., MUNICIPAL BUILDING COMMISSION (through Mr. George Dwight Pratt, chairman): 2 medals, 1 in bronze and 1 in silver, commemorating the dedication of the Springfield Municipal Group of civic buildings, 1913 (56416).

SPRINKEL, J. W., Brightwood, Va.: Larva of hickory horned devil, *Citheronia regalis* (55837).

STANDARD UNDERGROUND CABLE COMPANY, Pittsburgh, Pa.: 13 specimens of copper wire and cable, received at the close of the Louisiana Purchase Exposition, 1904 (56148).

STANLEY, PAUL C., U. S. National Museum: 15 plants from Maryland and Virginia (55965); 25 plants from Ulster County, N. Y. (56940).

STANLEY, PAUL C., and H. C. BOLLMAN, Smithsonian Institution: 740 plants from Buncombe and McDowell counties, N. C.; also a bat, 3 snakes, amphibians, snails and shells, myriapods and crayfish (55876).

STANTON, DR. A. T., Institute for Medical Research, Kuala Lumpur, Federated Malay States: 40 mosquitoes from the Federated Malay States (56764).

STAR RIBBON MANUFACTURING COMPANY, New York City: A sample of ribbon fabric showing one end with cut ribbons (56264).

STARK, JAMES H., Boston, Mass.: Specimen of volcanic rock from Bermuda (56778).

STATE, DEPARTMENT OF:

Alaska Boundary Survey: 20 plants collected in Alaska by Mr. D. W. Eaton (56051).

STATZ, B. A., Albuquerque, N. Mex.: Samples of vanadium ore from Lucky Bill Mine, Bayard, N. Mex. (56543).

STEARNS, Commander C. D., U. S. Navy, Governor, American Samoa, Tutuila, Samoa: Large specimen of an alcyonarian coral (56852); 55 specimens of ferns from Samoa (56984).

STEEL, THOMAS, Sydney, New South Wales: 19 specimens of land planarians and 9 specimens of onychophores (57119: exchange).

STEELE, E. S., U. S. National Museum: 663 plants collected in Virginia and Maryland (56528).

STERN AND POHLY, New York City: 2 2-yard lengths of plisse epingle, 1 2-yard length of silk faille, 1 2-yard length of taffeta, 1 1-yard length of moire antique (57064).

STETSON, JOHN B., COMPANY, Philadelphia, Pa.: A series of specimens and photographs illustrating the manufacture of fur felt hats (57066).

STEVENS, DR. WILLIAM L., Centerville, Va.: Specimen of oil beetle, *Meloe* sp. (56504).

STEVENSON, J. McALLESTER, JR., Sweetwater, Tex.: Samoan war club (55852: loan).

STEWART SILK COMPANY, New York City: 6 2-yard lengths of crêpe de chine, crêpe faille and Chinese crêpe (56748).

STIBBENS, DR. F. H., U. S. Navy, U. S. S. *Annapolis* (through Dr. J. C. Thompson, U. S. Navy): An octopus and a cœcilian from Honduras (56466).

STIEGLITZ, ALFRED, New York City: "The Stieglitz Collection" of 26 framed pictorial photographs (55701: purchase).

STOCKHOLM, SWEDEN, NATURHISTORISKA RIKSMUSEUM, BOTANISKA AFDELNING (through Dr. Carl Lindman, director): 175 specimens of grasses collected in Brazil by Dr. P. Dusén (55699); 153 specimens of grasses collected in South America by Dr. E. L. Ekman (56600). Exchange.

STONE, FRANK W., Washington, D. C.: Case containing 59 mounted birds from various parts of the world (56861).

STOKE, GEORGE W., U. S. Geological Survey, Washington, D. C.: A tooth of *Elephas primigenius* from Crown Point, Ind. (56914).

STRAUSS, J. C., St. Louis, Mo. (through Mr. George W. Harris, Washington, D. C.): Photographic portrait of a lady (56584).

STRETCH, Capt. R. H., Seattle, Wash.: Augite crystals from St. Paul Island, Pribilof group, Bering Sea, received through the U. S. Geological Survey (56246); specimen of chalcedony colored by cinnabar, from Knoxville, Cal., received through Prof. F. W. Clarke, Washington, D. C. (56398).

STURTEVANT, E. D., Hollywood, Cal.: Living specimen of *Cercus maynardi* and one specimen of *Echinopsis* (56996: exchange).

SUMMERSON, C. T., New York City: 2 skulls of Dall's sheep, *Ovis dalli kennicensis*, and skull of a moose, *Alces gigas*, from Kenai Peninsula, Alaska (56228); skulls and head skins of 2 caribou, *Rangifer*, from Riddell River, Yukon (56350); skull of a wolf, *Canis occidentalis*, head of a moose, *Alces americanus*, and head of a caribou, *Rangifer stoeni*, from Yukon Territory (56523; 56580).

SURR, GORDON, San Bernardino, Cal.: Specimen of lapis lazuli from San Bernardino County, Cal. (56038); 9 specimens of minerals from California (56594); 2 specimens of vesuvianite and 1 of brucite in limestone, from Crestmore, Cal. (56819; 56849); 11 concretions from Lehy, Wash. (56660).

SUSQUEHANNA SILK MILLS, New York City: A 2-yard sample of dress goods "fancy matelasse" (56645).

SWEET, Mrs. H. E., and Miss M. D. SWEET, Providence, R. I. (through Henry L. Scott & Co.): Spinning wheel, yarn reel and umbrella reel (55743).

SWETT, LOUIS W., Boston, Mass.: 2 geometrids (56237).

SWEZEEY, OTTO H., Honolulu, Hawaii: 150 reared Hawaiian Microlepidoptera (56727).

SYDNEY, NEW SOUTH WALES, AUSTRALIA, BOTANIC GARDENS: 200 plants from Australia and the Pacific Islands (55720; 56557: exchange).

TALBOT, C. H., Chippenham, England: Photographic journal entitled "Pencil of Nature," and 32 calotypes (56462).

TAYLOR-FRIEDSAM COMPANY, New York City: 12 2-yard lengths of satin, taffeta, grosgrain and warp-printed ribbons (56746).

TAYLOR, W. S., Jensen, Utah: 12 specimens of Carboniferous invertebrate fossils from Utah (55930).

TEELE, MRS. ALICE G., Stoughton, Mass.: Nest of the Carolina wren, *Thryothorus ludovicianus*, from Alabama (57013).

TEERY, MYRON J., Johannesburg, Cal.: Indian skull (55826).

TERZIAN, D., Washington, D. C.: Collection of Persian, Turkish and Arabic tiles and fragments of tiles, and a Persian ornament for a horse (55709: purchase).

TEVIS, LANSING K., San Francisco, Cal.: Miniature basket ($\frac{3}{8}$ of an inch in diameter) from Arizona (55661).

TEYSSIER, HENRY, Clermont-Ferrand, France: Sample of the diatomaceous deposit at Andreugolet, Haute-Loire, France (56047).

THATCHER, AARON H., Rich Hill, Mo.: An anvil which was in possession of the Mormons at Nauvoo, Ill., many years previous to their journey to Salt Lake (56283).

THIERFELDER, A. O., New Rochelle, N. Y.: Short-tailed shrew, *Blarina brevicauda*, from New Rochelle (56096).

THOMAS, C. AUBREY, Kennett Square, Pa.: Specimen of Muhlenberg's turtle (57075).

THOMAS-DURIS, G., Château de Legaud, par Eymoutiers, Haute-Vienne, France: 4 living specimens of *Sedum* from Michoacan, Mexico (56320).

THOMPSON, DR. J. C., U. S. Navy: Insects, reptiles and batrachians, from California (55807; 55952); insects and bones of *Chondrotus te-*

THOMPSON, Dr. J. C.—Continued.
nebrosus (56205); reptiles, insects and a bat, from Mexico (56465); reptiles and amphibians from the Pacific coast (56518). (See under Dr. F. H. Stibbens.)

THUROW, F. W., Hockley, Tex.: 17 plants from Texas (56321).

TIDESTROM, IVAR, U. S. Department of Agriculture, Washington, D. C.: 108 plants chiefly from the eastern part of the United States (55936; 57069); 76 plants from the southeastern part of the United States (56252); 100 plants from various localities (56664; 56874); 50 plants chiefly from the western part of the United States (56777).

TIFFANY, LOUIS C., GRANITE QUARRIES OF, Cohasset, Mass.: A 5-inch cube of granite (56661).

TIMBERLAKE, P. H., Bureau of Entomology, Washington, D. C.: Spiders and beetle larvae, from the White Mountain region, N. H. (56704).

TISDELL, MRS. WILLARD PARKER, Washington, D. C.: 2 ancient Peruvian vases, parts of earthenware effigies from Guatemala and Colombia, 6 oil paintings of South American Indians, and 2 paintings on cedar from Cartagena, Colombia, South America (56547).

TODD, AURELIUS, Frontera, Mexico: Fossil echinoderm (55828).

TOLMAN, R. P., U. S. National Museum: Material for an exhibit of monotypes (57081); 20 specimens of rotary intaglio, 15 pages of half-tone relief and type printing and 9 plates of men's fashions (57106).

TOMACELLI, D. C., Villa Alta, Mexico: 4 specimens of *Agave* fibre (57072).

TONDUZ, A., San José, Costa Rica: 140 plants from Costa Rica (56772: purchase).

TORONTO, CANADA, ROYAL ONTARIO MUSEUM OF MINERALOGY: 31 specimens of rocks and ores from Canada (56581: exchange).

TRASK, MRS. BLANCHE, Avalon, Cal.: Snake and lizard from California (56136).

TREASURY DEPARTMENT:

Set of 18 Dutch standard sugar samples (Nos. 8 to 25, inclusive), received through the Division of Customs. This standard has been in use for 40 years, until the passage of the tariff bill of 1913 (55980); a basket of Chinese "medicine tea," a low grade of tea much over-fermented, and 2 packages of "kum-wo-cha," a medicated tea exported from Hong Kong to Hawaii, received through the Supervising Tea Examiner (56276).

TRENIS, O. J., Washington, D. C.: Duck hawk, *Falco peregrinus anatum*, sparrow hawk, *F. sparverius*, and red-shouldered hawk, *Buteo lineatus*, in immature plumage, all from Washington (56596; 56608); red-tailed hawk, *Buteo borealis* (56648).

TUCKERMAN, MISS EMILY, Washington, D. C.: Piece of point de France et Personages (55655); silver wine cooler with 2 bottle holders, presented by George Washington to Oliver Wolcott, Secretary of the Treasury, and lent to the National Museum by his great granddaughter (56724: loan).

TUMLEY, W. D., Fort Meade, Fla.: Galls of *Cecidomyia riticola* (56879).

TÜRKHEIM, BARON H. VON, Coban, Guatemala: 3 specimens (1 living) of *Epiphyllum* from Chajiar, Guatemala (55646).

TURNER, G. B., U. S. National Museum: Bat, *Eptesicus fuscus fuscus*, from Washington, D. C. (56967).

TURNER, H. J. ALLEN, Nairobi, British East Africa: 30 mammals from British East Africa (55707; 55983; 56616).

TWEEDIE, ROBERT, Balboa, Canal Zone: Fishes, snakes, mollusks, crustaceans, and a sipunculid, from the Pacific side of the Panama Canal Zone (55821).

TYLER, Mrs. JOHN PAUL, Baltimore, Md.: Collection of ancient coins, seals and bronze figurines, gathered in Syria by the Rev. C. S. Sanders, and deposited by his daughter (56635: loan).

UDDEN, Dr. JOHAN AUGUST, University of Texas, Austin, Tex.: 2 specimens of Carboniferous crinoids from Texas (56621).

ULRICH, Dr. E. O., U. S. Geological Survey, Washington, D. C.: About 3,000 specimens of Paleozoic fossils from Canada (56016).

UNITED STATES CAPITOL (through Mr. Elliott Woods, Superintendent, U. S. Capitol Building and Grounds): Bronze doors for the west entrance of the Capitol, executed by Louis Amateis, sculptor (56503: loan).

UNITED STATES GYPSUM COMPANY, Chicago, Ill.: 20 specimens of gypsum products, received at the close of the Louisiana Purchase Exposition, 1904 (56152); 1 1,200-pound specimen of gypsum from Blue Rapids, Kans., and a series of 6 varieties of gypsum products (57126).

UNIVERSAL WINDING COMPANY, Boston, Mass.: A series of specimens showing the various classes of materials wound on tubes, cops, cones and bobbins by the universal winding machine (56991); the original model of the universal winding machine (57030: loan).

UNIVERSITETETS ZOOLOGISKE MUSEUM. (See under Copenhagen, Denmark.)

UNIVERSITY OF CALIFORNIA, MUSEUM OF VERTEBRATE ZOOLOGY. (See under California, University of.)

UNIVERSITY OF COLORADO. (See under Colorado, University of.)

UNIVERSITÉ DE LIÈGE. (See under Liège, Belgium.)

UNIVERSITY OF MICHIGAN, MUSEUM OF ZOOLOGY. (See under Michigan, University of.)

UNIVERSITY OF NEVADA. (See under Nevada, University of.)

UNIVERSITY OF PENNSYLVANIA, DEPARTMENT OF BOTANY. (See under Pennsylvania, University of.)

UNIVERSITY OF SOUTH DAKOTA, UNIVERSITY MUSEUM. (See under South Dakota, University of.)

UNIVERSITY OF WYOMING. (See under Wyoming, University of.)

URBAN, Prof. I., Dahlem bei Steglitz (Berlin), Germany: 197 plants collected in Santo Domingo by Padre Fuertes (55848: purchase).

VAN DUZEE, M. C., Buffalo, N. Y.: 5 specimens, representing 3 species, of Dolichopodidæ (55883); 6 specimens of *Hoplocampa halcyon* (56933).

VAN DYKE, Mrs. A. M., Lawtey, Fla.: Gobelin square mounted in tabletop and glazed, French, 17th century (56165: loan).

VAN RAALTE, E. & Z., New York City: 36 samples of American-made veilings and 2-yard lengths of 24 patterns (55938).

VAN SCHAICK, Mrs. JOHN, jr., Washington, D. C.: Cameo set of 5 pieces (2 bracelets, 2 earrings and a pendant); 3 brooches (1 of porcelain, 1 of enamel and 1 set with a trilobite); 2 pendants (1 of Limoges enamel set with jewels and 1 of Roman mosaic); 1 ivory triptych, 15th century (57076).

VENICE MARINE BIOLOGICAL STATION, UNIVERSITY OF SOUTHERN CALIFORNIA, Venice, Cal.: 7 vials of crustaceans from California (56085); 2 crabs representing 2 species, 3 adults and 2 larvae of Coleoptera, a specimen of *Otodistomum veliporum*? and a monogenetic trematode (56559); 4 specimens of nemerteans, *Cerebratulus marginatus* and *Lineus pictifrons* (56790; 57032); 7 bottles of sponges (57102).

VIENNA, AUSTRIA, K. K. NATURHISTORISCHES HOFMUSEUM: 100 specimens of cryptogams (Kryptogamæ Exsiccatæ, Century XXI) (56103: exchange).

VIERBECK, H. L., Natural History Museum, Kansas University, Lawrence, Kans.: 8 specimens of land and fresh-water mollusks from Minnesota (56433).

VINCENT, MRS. ELIZABETH CARTER (through Mr. O. W. Norton, Chicago, Ill.): Sword of Brig. Gen. Strong Vincent, U. S. Volunteers, which he carried from April, 1861, until July 2, 1863, when he was mortally wounded while in command of the brigade defending Little Round Top, Gettysburg (55740).

VOLKART, HENRY, St. Gallen, Switzerland: 8 specimens and 3 photographs of Tunisian and Algerian weaving with quadrangular boards; 2 photographs of old heddles (55957).

WAGNER, GILBERT C., Woodside, Long Island, N. Y.: 6 specimens of minerals (57057).

WAGNER, ROY S., Fresno, Cal.: A small collection of insects (56767).

WAGSTAFF, R. O., Sugar Grove, Ohio: 14 mineral specimens from North Carolina (56338).

WALD, MISS MARGARET F., Keyser, Colo.: Specimen of tiger beetle, *Cicindela pulcher* (55916).

WALT, HARRY, San Diego, Cal.: Winged male adult of *Abedus macronyx* (56815).

WANAMAKER, RODMAN, Philadelphia, Pa.: 154 bromide enlargements of pictures representing various types of the North American Indian, his country and home life, taken by Dr. Joseph K. Dixon upon two historical expeditions sent out by Mr. Wanamaker to study the life and character of the Indian (56840).

WAND, W. J., Sanger, Tex.: Beetle, *Strategus julianus* (55992).

WAR DEPARTMENT:

United States magazine rifle, caliber .30, model of 1903 (57079).

Office of Public Buildings and Grounds: Section of trunk of empress tree, *Paulownia tomentosa*,

WAR DEPARTMENT—Continued.

from the Smithsonian grounds (56281).

WARD, MRS. COONLEY, Wyoming, N. Y.: An exhibition slab of the Estacado meteorite (55682); 7 specimens of meteorites—Gilgoen, Canyon City, Alfianello, Desubridora, Pultusk, Mocs and Knyahinya (55933: purchase).

WARD, F. D., Johannesburg, South Africa: Dugong. *Dugong dugon* (56551).

WARD, MRS. MARGARET T., Rushton, Mich.: Egg of a domestic duck (55747).

WARD, ROWLAND, LTD., London, England: Specimen of Pere David's deer, *Elaphurus davidianus* (56373: purchase).

WARNER-GODFREY COMPANY, New York City: 5 2-yard cuts of novelties (56801).

WASHBURN, CHESTER W., Washington, D. C.: 2 skulls found in sand dunes on the east coast of Patagonia, north side of Peninsula Valdez, Chubut Territory, Argentina (55919); 12 specimens of fossil fresh-water crustaceans from the Payette formation near Vale, Oreg., and a stone ball from an Indian mound west of Junction, Oreg. (56197); skull found in sand dune at San José, Peninsula Valdez (56240).

WASHINGTON, CHARLES S., U. S. National Museum: Earthworms from Washington, D. C. (56060); parasitic worm, *Ascaris suum* (56245); leeches from turtle captured at Burville, D. C. (56847).

WATSON, MRS. HARRY W., Pinos Altos, N. Mex.: 7 unmounted photographic prints—views of caves on the west fork of the Gila River, N. Mex. (57078).

WEBB, JOHN S., Disputanta, Va.: Marsh hawk, *Circus hudsonius*, from Virginia (56222).

WEED, A. C., North Rose, N. Y.: Firefly, *Photinus ardens*, and 3 glow-worms (55996).

WEIGEL, THEODOR OSWALD, Leipzig, Germany: 50 specimens of *Salix* (Fascicle VIII of Toeppfer's *Salicetum Exsiccatum*) (56267: purchase).

WEINGART, W., Georgenthal, Thüringen, Germany: 11 living specimens of Cactaceae (55804; 56826). Exchange.

WELD, LEWIS H., Medina, N. Y.: 3 galls and 62 paratypes of *Neuroterus washingtonensis* from Friday Harbor, Puget Sound, Wash. (55725).

WELSBACH LIGHT COMPANY, Gloucester City, N. J.: 17 specimens of materials used in the manufacture of Welsbach mantles, received at the close of the Louisiana Purchase Exposition, 1904 (56150).

WENZEL, C. A., Jaro, Leyte, P. I.: 338 plants from the Philippine Islands (56057; 56771). Purchase.

WESENBERG-LUND, DR. C., Hilleröd, Denmark (through Dr. Adam Giede Böving): 21 vials of specimens from the collections on which the donor based his recent paper on the biology of fresh-water insects (56427).

WEST, CAPT. H. S., Point Pleasant, W. Va. (through Dr. L. V. Guthrie, Huntington, W. Va.): Upper cheek tooth of an extinct species of horse, *Equus niobrarensis*, from West Virginia (56031: loan).

WESTERN AUSTRALIAN MUSEUM AND ART GALLERY. (See under Perth, Western Australia.)

WESTERN COAL AND MINING Co., St. Louis, Mo.: Coal mine model, received at the close of the Louisiana Purchase Exposition, 1904 (56034).

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, East Pittsburgh, Pa.: 42 specimens of crude mica and its industrial products (56386).

WESTMORELAND COAL COMPANY, Irwin, Pa.: Lump of coal from Criterion Mine, Rillton, Pa. (56720).

WEST VIRGINIA & PITTSBURG SAND Co., Berkeley Springs, W. Va.: 8 samples of glass sand showing quarry and mill products (56348).

WETMORE, ALEX, Bureau of Biological Survey, Washington, D. C.: 4 bird skins from Virginia (56851).

WETMORE, Maj. WILLIAM BOERUM, Washington, D. C.: Plaster cast of the hand of Abraham Lincoln (55705).

WHEAT, SILAS C., Brooklyn, N. Y.: Paratypes of *Aemaa fergusoni* and *Urosalpinx cinerea* var. *aitkiniae*, from Hempstead Bay, Long Island Sound, N. Y. (56059).

WHEELER, WILLIAM D., Washington, D. C.: Portrait group, in oil, by Thomas Sully—"Portrait of the artist's daughter, Mrs. John H. Wheeler, and her sons" (56689: loan).

WHELPLEY, DR. H. M., St. Louis, Mo.: Flint nodules and worked fragments of flint, from the vicinity of Cobden, Ill. (55830).

WHERRY, DR. EDGAR T., U. S. National Museum: 4 specimens of minerals from Avondale, Pa. (56253); 2 specimens of beraunite from Hellertown, Pa. (56696).

WHITE HOUSE, Washington, D. C. (through the Office of Public Buildings and Grounds): A mounted deer head and 2 mounted pheasants (56640).

WHITMAN, CLARENCE, & Co., Inc. (See under Ponemah Mills.)

WICKERSHAM, HON. JAMES, Delegate to Congress from Alaska: A Shoshone pipe (55818).

WILCOX, MISS MARY R., Chevy Chase, Md.: Overdress and flounce of blonde lace, and bodice of old-gold satin brocaded in colors, worn by Mrs. Andrew Jackson Donelson, niece and adopted daughter of Mrs. Andrew Jackson; tortoise-shell back-comb carved with national emblems and medallions of Jackson, Jefferson and Washington, presented to Mrs. Andrew Jackson after the battle of New Orleans (56545); silver filigree card-case used by Mrs. Andrew Jackson (56639); a printed invitation to a ball given in honor of

WILCOX, Miss MARY R.—Continued, the election of Gen. Andrew Jackson to the Presidency of the United States, dated December 10, 1828, and addressed to Mrs. Andrew J. Donelson (56683). Loan.

WILCOX, Brig. Gen. TIMOTHY E., U. S. Army (retired), Washington, D. C.: 3 specimens of *Vitis* from the District of Columbia (55765).

WILCOX, WALTER D., Washington, D. C.: 3 photographs—landscapes, Canadian Rockies, reproduced from autochromes by the donor (57130).

WILD, WILLIAM, East Aurora, N. Y.: 11 specimens of bred Coleoptera (56575).

WILKES, Miss JANE, Washington, D. C.: Personal reliques of Rear Admiral Charles Wilkes, U. S. Navy (56944).

WILLCOX, JOSEPH, Philadelphia, Pa.: 4 specimens of Tertiary fossils from the Miocene of North Carolina and the Pliocene of Florida (56419).

WILLIAMS, A. H., Gainesville, Tex.: Specimen of native sulphur (56323).

WILLIAMS, R. W., Office of the Solicitor, U. S. Department of Agriculture, Washington, D. C.: 98 bird skins from the United States (56950).

WILLIAMS & WILKINS COMPANY, Baltimore, Md.: 5 specimens showing method of Waverly Press in binding a magazine (56369).

WILLIAMSON, Prof. E. B., Bluffton, Ind.: 46 dragonflies from North, Central and South America, representing 10 species and including 3 species new to the Museum collection, four of the specimens being eotypes belonging to one species (56110); 13 dragonflies, representing 4 species, from Arizona and Trinidad, including a male paratype of *Metaleptobasis mauritia*, n. sp., from Trinidad (56199); 57 North American dragonflies from Texas, Oklahoma and other localities, representing 20 species and including paratypes of 1 new to the Museum collection (56404).

WILMER, Col. L. WORTHINGTON, Lothian House, Ryde, Isle of Wight, England: 50 fossil shells, insects and a plant, from the Isle of Wight (56041).

WILSON ALUMINUM COMPANY, Holcomb's Rock, Va.: 9 specimens of Iron alloys, received at the close of the Louisiana Purchase Exposition, 1904 (56151).

WILSON, PHILIP D., Bisbee, Ariz.: 3 specimens of cuprodescloizite (new variety); type material (56063).

WILSON, Mrs. THOMAS HAMILTON, and Miss ABERCROMBIE, Washington, D. C.: Articles of early American wearing apparel and accessories of dress (56534: loan).

WIMSATT, W. C., Washington, D. C.: Barn owl, *Tyto pratineola*, from Washington (56214).

WINCHESTER REPEATING ARMS COMPANY, New Haven, Conn.: 2 Winchester sporting rifles (56763).

WINKLEY, Rev. H. W., Danvers, Mass.: About 50 specimens, representing 6 species, of marine and land shells from Eastport, Me., and Provincetown, Mass. (56191).

WITCOMBE, McGEACHIN & Co., New York City: 19 lengths of 2 yards each of old English hand-printed chintzes (56219).

WOOD, NELSON R., U. S. National Museum: 6 specimens of *Neoseps* and 2 frogs, from Florida (56537); young robin, *Planesticus migratorius*, and young blue jay, *Cyanocitta cristata*, from the District of Columbia (57020).

WOOD, Mrs. O. E., Kingston, N. Y.: 8 pieces of brassware (56739: loan).

WOODBURY, Miss ELLEN C. DEQ. (through Mr. Gist Blair, executor, Washington, D. C.): Silver and coral rattle which belonged to John Hancock, Governor of Massachusetts; also papers establishing its authenticity (56535: bequest).

WOODS, FRANCIS L. (See under Charles H. Hussey.)

WOODWARD, S. W., Washington, D. C.: Drawing in color of a mosaic map of Palestine and adjacent regions (56365). (See under Egypt Exploration Fund.)

WOODWARD & LOTHROP, INC., Washington, D. C.: 12 samples of cotton ratiue dress goods (56969).

WOOLLEY, CLAUDE L., Baltimore, Md.: A circular sundial with aluminum base and brass gnomon, calculated for the latitude of Peking, China, 40° north, and inscribed with Chinese characters (56669).

WOOTEN, Maj. W. P., U. S. Army, Honolulu, Hawaii: Diatomaceous mud from Pearl and Hilo harbors, Hawaii (55721).

WORCESTER NATURAL HISTORY SOCIETY, Worcester, Mass. (through Mrs. Ella L. Horr, custodian): Specimen of a young gecko, *Sphaerodactylus*, possibly from Cuba (55734).

WURZLOW, E. C., Houma, La.: 6 living specimens of *Opuntia* and 5 bulbs of *Hymenocallis*, from Louisiana (55783; 56139).

WYOMING, UNIVERSITY OF, Laramie, Wyo.: 940 plants from the western part of the United States (56045: exchange).

YELLOWSTONE NATIONAL PARK. (See under Interior, Department of.)

YOTHERS, W. W., Orlando, Fla.: Lizard, *Rhineura floridana*, from Florida (56672).

YOUNG, JAMES HAY, Meredith, Victoria, Australia: Specimens of *Paryphanta*, *Viripara* and *Natica*, from Australia (56684); Tertiary mollusks and Ordovician graptolites, from Australia (56755). Exchange.

YOUNG, R. T., University of North Dakota, University, N. Dak.: 13 Insects (56680).

ZEESE-WILKINSON CO., New York City: 16 specimens of materials used in the making of 3-color relief printing plates (55974).

ZETEK, JAMES, Aneon, Canal Zone: Bat, *Artibeus*, 2 vials of myriapods, 20 specimens of land and fresh-water shells and 47 lots of marine shells, collected in the Canal Zone; also 3 specimens of onychophores, *Peripatus ruber*, from Chiriqui (56210; 56977).

ZIMMERMAN, MARK E., White Cloud, Kans.: Fragmentary skull and femur, from a stone grave on a farm at the mouth of Mission Creek, Doniphan County, Kans. (56532).

ZOOLOGISCHE SAMMLUNG UND ZOOLOGISCHES INSTITUT. (See under Munich, Germany.)

LIST OF PUBLICATIONS OF THE U. S. NATIONAL MUSEUM ISSUED DURING THE FISCAL YEAR 1913-1914, AND OF PAPERS PUBLISHED ELSEWHERE WHICH RELATE TO THE COLLECTIONS.

PUBLICATIONS OF THE MUSEUM.

ANNUAL REPORTS.

Smithsonian Institution | United States National Museum | — | Report on the progress and condition of the United States | National Museum for the | year ending June 30, 1912 | (Seal) | Washington | Government Printing Office | 1913

8vo., pp. 1-165.

Smithsonian Institution | United States National Museum | — | Report on the progress and condition of the United States | National Museum for the | year ending June 30, 1913 | (Seal) | Washington | Government Printing Office | 1914

8vo., pp. 1-201.

PROCEEDINGS.

Smithsonian Institution | United States National Museum | — | Proceedings | of the | United States National Museum | — | Volume 44 | — | (Seal) | Washington | Government Printing Office | 1913

8vo., pp. i-xii, 1-666,
pls. 1-82, 90 figs.,
1 map.

(Seal) | Washington | Government Printing Office | 1913

8vo., pp. i-xi, 1-669,
pls. 1-57, 37 figs.,
6 maps.

Smithsonian Institution | United States National Museum | — | Proceedings | of the | United States National Museum | — | Volume 45 | — |

Smithsonian Institution | United States National Museum | — | Proceedings | of the | United States National Museum | — | Volume 46 | — | (Seal) | Washington | Government Printing Office | 1914

8vo., pp. i-xiii, 1-681,
pls. 1-57, 212 figs.

BULLETINS.

Smithsonian Institution | United States National Museum. | — | Bulletin | of the | United States National Museum. | No. 50. | — | The Birds | of | North and Middle America. | By | Robert Ridgway, | Curator, Division of Birds. | — | Part VI. | — | (Seal) | Washington: | Government Printing Office. | 1914.

8vo., pp. i-xx, 1-882,
pls. I-XXXVI.

Smithsonian Institution | United States National Museum | Bulletin 71 | — | A monograph of the Foraminifera | of the North Pacific Ocean | — | Part III. Lagenidae | — | By | Joseph Augustine Cushman | Of the Boston Society of Natural History | (Seal) | Washington | Government Printing Office | 1913

8vo., pp. i-ix, 1-125,
pls. 1-47.

Smithsonian Institution | United States National Museum | Bulletin 71 | — | A monograph of the Foraminifera | of the North Pacific Ocean | — | Part IV. Chilostomellidae, Globigerinidae, Nummulitidae | — | By | Joseph Augustine Cushman | Of the Boston Society of Natural History | (Seal) | Washington | Government Printing Office | 1914

8vo., pp. i-vi, 1-46,
pls. 1-19.

Smithsonian Institution | United States National Museum | Bulletin 80 | — | A descriptive account of the building | recently erected for the departments | of natural history of the United | States National Museum | By | Richard Rathbun | Assistant Secretary of the Smithsonian Institution in Charge | of the United States National Museum | (Seal) | Washington | Government Printing Office | 1913

8vo., pp. 1-131, pls.
1-34.

Smithsonian Institution | United States National Museum | Bulletin 83 | — | Type species of the genera of | ichneumon flies | By | Henry L. Viereck | Of the Bureau of Entomology, United States | Department of Agriculture | (Seal) | Washington | Government Printing Office | 1914

8vo., pp. i-v, 1-186.

Smithsonian Institution | United States National Museum | Bulletin 84 | — | A contribution to the study of ophiurans | of the United States National Museum | By | René Kœhler | Professor of Zoology, University of Lyon, France | (Seal) | Washington | Government Printing Office | 1914

4to., pp. i-vii, 1-173,
pls. 1-18.

Smithsonian Institution | United States National Museum | Bulletin 85 | — | A monograph of the | jumping plant-lice or Psyllidae | of the New World | By | David L. Crawford | Of the Laboratory of General Biology, Cornell University | Ithaca, New York | (Seal) | Washington | Government Printing Office | 1914

8vo., pp. i-ix, 1-186,
pls. 1-30.

Smithsonian Institution | United States National Museum | Bulletin 86 | — | A monograph of the genus Chordeiles | Swainson, type of a new family | of goatsuckers | By | Harry C. Oberholser | Of the Biological Survey, United States | Department of Agriculture | (Seal) | Washington | Government Printing Office | 1914

8vo., pp. i-vii, 1-123,
pls. 1-6.

Smithsonian Institution | United States National Museum | Bulletin 87 | — | Culture of the ancient Pueblos of | the upper Gila River region, | New Mexico and Arizona | — | Second Museum-Gates Expedition | — | By | Walter Hough | Curator, Division of Ethnology, United States National Museum | (Seal) | Washington | Government Printing Office | 1914

8vo., pp. i-xiv, 1-139,
pls. 1-29, figs. 1-348.

PAPERS PUBLISHED IN SEPARATE FORM.

FROM VOLUME 45 OF THE PROCEEDINGS.

No. 1976. Treeshrews: An account of the mammalian family Tupaiidae. By Marcus Ward Lyon, jr. pp. 1-188, pls. 1-11, 15 figs.

No. 1985. New species of Silurian fossils from the Edmunds and Pembroke formations of Washington County, Maine. By Henry Shaler Williams. pp. 319-352, pls. 29-31.

No. 2005. The Mount Lyell copper district of Tasmania. By Chester G. Gilbert and Joseph E. Pogue. pp. 609-625, pls. 48-51, one map.

No. 2006. Results of the Yale Peruvian Expedition of 1911. Lepidoptera. By Harrison G. Dyar. pp. 627-649.

No. 2007. Description of *Mesoplodon mirum*, a beaked whale recently discovered on the coast of North Carolina. By Frederick W. True. pp. 651-657, pls. 52-57, one fig.

FROM VOLUME 46 OF THE PROCEEDINGS.

No. 2008. New genera and species of Thysanoptera, with notes on distribution and food plants. By A. C. Morgan. pp. 1-55, figs. 1-79.

No. 2009. Notes on an unusually fine slab of fossil crinoids. By R. S. Bassler. pp. 57-59, pls. 1, 2.

No. 2010. New parasitic Hymenoptera of the genus *Eiphosoma*. By T. D. A. Cockerell. pp. 61-64.

No. 2011. Notes on a collection of fishes from the Island of Shikoku in Japan, with a description of a new species, *Gnathopops iyonis*. By David Starr Jordan and William Francis Thompson. pp. 65-72, figs. 1-5.

No. 2012. A new nematode, *Rictularia splendida*, from the coyote, with notes on other coyote parasites. By Maurice C. Hall. pp. 73-84, figs. 1-6.

No. 2013. Notes on the bats of the genus *Molossus*. By Gerrit S. Miller, jr. pp. 85-92.

No. 2014. Preliminary report on a recently discovered Pleistocene cave deposit near Cumberland, Maryland. By James Williams Gidley. pp. 93-102, figs. 1-8.

No. 2015. New moth-flies (Psychodidae) bred from Bromeliaceae and other plants. By Frederick Knab. pp. 103-106.

No. 2016. New mollusks from the Bahama Islands. By Paul Bartsch. pp. 107-109, plate 3.

No. 2017. Notes on the Odonata, or dragonflies, of Bumping Lake, Washington. By Clarence Hamilton Kennedy. pp. 111-126, 58 figs.

No. 2018. A synopsis of the genera of Agromyzidae, with descriptions of new genera and species. By J. R. Malloch. pp. 127-154, pls. 4-6.

No. 2019. A new sponge from the New Jersey Cretaceous. By Hervey W. Shimer and Sidney Powers. pp. 155-156, pl. 7.

No. 2020. The variation exhibited by mainland and island specimens of the Hibakari snake, *Natrix vibakari* (Boie). By J. C. Thompson. pp. 157-160.

No. 2021. The extinct bisons of North America; with description of one new species, *Bison regius*. By Oliver P. Hay. pp. 161-200, pls. 8-19, figs. 1-10.

No. 2022. New starfishes from the Philippine Islands, Celebes, and the Moluccas. [Scientific results of the Philippine cruise of the Fisheries steamer "Albatross," 1907-1910. — No. 30.] By Walter K. Fisher. pp. 201-224.

No. 2023. On a brackish water Pliocene fauna of the Southern Coastal Plain. By William Healey Dall. pp. 225-237, pls. 20-22.

No. 2024. The genera of flies in the subfamily Botanobinae with hind tibial spur. By J. R. Malloch. pp. 239-266, pls. 23, 24.

No. 2025. Camels of the fossil genus *Camelops*. By Oliver P. Hay. pp. 267-277, pls. 25, 26, one fig.

No. 2026. Revision of the crinoid genus *Himerometra*. By Austin Hobart Clark. pp. 279-289.

No. 2027. A review of the fishes of the genus *Osmerus* of the California coast. By Mary Fisk. pp. 291-297, one fig.

No. 2028. A review of the Philippine land mammals in the United States National Museum. By N. Hollister. pp. 299-341, pls. 27-29.

No. 2029. Descriptions of new Hymenoptera, No. 8. By J. C. Crawford. pp. 343-352, figs. 1-8.

No. 2030. Descriptions of new species of crabs of the families Grapsidae and Ocypodidae. By Mary J. Rathbun. pp. 353-358, pls. 30-33.

No. 2031. Descriptions of twenty-three new genera and thirty-one new species of Ichneumon-flies. By Henry L. Viereck. pp. 359-386.

No. 2032. A list of the Rotatoria of Washington and vicinity, with descriptions of a new genus and ten new species. By Harry K. Harring. pp. 387-405, pls. 34-38.

No. 2033. Gad-flies (Tabanidae) of the genus *Stibasoma*. By Frederick Knab. pp. 407-412.

No. 2034. Revision of the bats of the genus *Glossophaga*. By Gerrit S. Miller, Jr. pp. 413-429.

No. 2035. New Hymenoptera from North America. By A. B. Gahan. pp. 431-443, pl. 39.

No. 2036. Some new American Pycnodont fishes. By James Williams Gidley. pp. 445-449, figs. 1-6.

No. 2037. North American spring-tails of the subfamily Tomocerinae. By Justus W. Folsom. pp. 451-472, pls. 40, 41, figs. 1-10.

No. 2038. Notes on the fossil crinoid genus <i>Homoerinus</i> Hall. By Edwin Kirk. pp. 473-483, pl. 42.	No. 2041. A contribution toward a monograph of the homopterous insects of the family Delphacidae of North and South America. By David L. Crawford. pp. 557-640, pls. 44-49.
No. 2039. New species of noctuid moths from tropical America. By William Schaus. pp. 485-549.	No. 2042. Archeological investigations in Ste. Genevieve County, Missouri. By David I. Bushnell, jr. pp. 641-668, pls. 50-57, figs. 1-8.
No. 2040. Notes on a viviparous distome. By Edwin Linton. pp. 551-555, pl. 43.	

FROM VOLUME 47 OF THE PROCEEDINGS.

No. 2043. New genera and species of Microlepidoptera from Panama. By August Busck. pp. 1-67.	No. 2048. Hymenoptera, superfamilies Apoidea and Chalcidoidea, of the Yale-Dominican Expedition of 1913. By J. C. Crawford. pp. 131-134.
No. 2044. New species of crabs of the families Grapsidae and Ocypodidae. [Scientific results of the Philippine cruise of the Fisheries steamer "Albatross," 1907-1910.—No. 31.] By Mary J. Rathbun. pp. 69-85.	No. 2049. Two cottoid fishes from Monterey Bay, California. By Charles H. Gilbert. pp. 135-137, pl. 11.
No. 2045. Names applied to the North American bees of the genera <i>Lithurgus</i> , <i>Anthidium</i> , and allies. By T. D. A. Cockerell. pp. 87-94.	No. 2050. Report on the Lepidoptera of the Smithsonian Biological Survey of the Panama Canal Zone. By Harrison G. Dyar. pp. 139-350.
No. 2046. The noctuid moths of the genera <i>Palindia</i> and <i>Dyomyx</i> . By Harrison G. Dyar. pp. 95-116.	No. 2051. The variations exhibited by <i>Thamnophis ordinoides</i> (Baird and Girard), a gartersnake inhabiting the Sausalito Peninsula, California. By Joseph C. Thompson. pp. 351-360.
No. 2047. New genera and species of American Brachyrhynchous crabs. By Mary J. Rathbun. pp. 117-129, pls. 1-10, figs. 1-5.	

FROM VOLUME 16 OF CONTRIBUTIONS FROM THE NATIONAL HERBARIUM.

Part 10. *Annona sericea* and its allies. By William E. Safford. pp. i-vii, 263-275, pls. 85-99, figs. 42-44.

Part 11. Nomenclature of the Sapote and the Sapodilla. By O. F. Cook. pp. i-vii, 277-285, pls. 100, 101, 1 fig.

Part 12. A monograph of the Hauyeae and Gongylocarpeae, tribes of the Onagraceae. By John Donnell Smith and J. N. Rose. pp. i-vii, 287-298, figs. 45-54.

Part 13. *Botrychium virginianum* and its forms. *Sphenoclea zeylanica* and *Caperonia palustris* in the southern United States. By Ivar Tidestrom. pp. i-vii, 299-307, pls. 102, 103.

FROM VOLUME 17 OF CONTRIBUTIONS FROM THE NATIONAL HERBARIUM.

Part 3. Mexican grasses in the United States National Herbarium. By A. S. Hitchcock. pp. i-xiv, 181-389.

Part 4. Studies of tropical American ferns—No. 5. By William R. Maxon. pp. i-x, 391-425, pls. 11-23, figs. 8-10.

Part 5. Studies of tropical American Phanerogams—No. 1. By Paul C. Standley. pp. i-x, 427-458, pls. 24-31.

FROM VOLUME 18 OF CONTRIBUTIONS FROM THE NATIONAL HERBARIUM.

Part 1. Classification of the genus *Annona* with descriptions of new and imperfectly known species. By W. E. Safford. pp. i-xii, 1-68, pls. 1-41, figs. 1-75.

Part 2. New or noteworthy plants from Colombia and Central America—4. By Henry Pittier. pp. i-x, 69-86, pls. 42-56, figs. 76-87.

CLASSIFIED LIST OF PAPERS BASED WHOLLY OR IN PART ON THE NATIONAL COLLECTIONS.¹

MUSEUM ADMINISTRATION.

RATHBUN, RICHARD. Report on the progress and condition of the United States National Museum for the year ending June 30, 1912.

8vo., pp. 1-165, Aug. 7, 1913.

— Report on the progress and condition of the United States National Museum for the year ending June 30, 1913.

8vo., pp. 1-201, 2 plans, May 2, 1914.

RATHBUN, RICHARD. A descriptive account of the building recently erected for the departments of natural history of the United States National Museum.

Bull. U. S. Nat. Mus., No. 80, pp. 1-131, pls. 1-34.

ANTHROPOLOGY.

BROCKETT, PAUL. A permanent exhibit of graphic arts in the United States National Museum.

The Graphic Arts and Crafts Year Book, 1913-14, 6, pp. 55-58, 4 pls.

The article states that the object of the exhibit of graphic arts is to illustrate the evolution of printing and engraving, and to show how the results have been obtained by means of tools, materials, and printings. The matter is presented under the following heads: Development of language and writing; writing implements and methods; the art of printing; drawing; relief engraving; intaglio engraving; planography (lith

BROCKETT, PAUL—Continued. ography, zincography); substitute processes (processes partly chemical, partly mechanical, devised as substitutes for the older hand processes); color printing; photo-mechanical processes; the art of bookbinding.

BUSHNELL, DAVID L., JR. Archeological investigations in Ste. Genevieve County, Missouri.

Proc. U. S. Nat. Mus., 46, No. 2042, Mar. 4, 1914, pp. 641-668, pls. 50-57, figs. 1-8.

Embodies interesting data relating to the aboriginal occupancy of southeastern Missouri; and contributes considerably to our knowledge of the Illinois and other historic tribes and to

¹ A few papers published prior to this fiscal year are included, having been inadvertently omitted from previous reports.

BUSHNELL, DAVID I., jr.—Continued.
the habits, customs and arts of the earlier inhabitants of the section who occupied the caves, buried their dead in stone elts, used flint hoes in cultivating crops, and manufactured salt by evaporation in great earthenware bowls. The culture forms an integral part of that of the great middle Mississippi Valley region in general. A brief report by Doctor Hrdlička on the skeletal remains shows no unusual features save in one case where slight artificial flattening of the cranium was observed.

DALL, WILLIAM HEALEY. An Eskimo artist.

The Nation, 97, No. 2510, New York, Aug. 7, 1913, p. 121.

A brief account of an Eskimo carver who made some remarkable carvings now in the collection of the National Museum.

FEWKES, J. WALTER. Great stone monuments in history and geography.

Smithsonian Misc. Colls., 61, No. 6, Sept. 16, 1913, pp. 1-50, figs. 1-50.

Brief account of the origin, character and probable significance of some of the better known monolithic monuments occurring throughout the world, with remarks on various distinctive types. One of the large stone figures from Easter Island, on exhibition in the National Museum, is referred to and illustrated.

FOOTE, J. S. The comparative histology of the femur.

Smithsonian Misc. Colls., 61, No. 8, Aug. 22, 1913, pp. 1-9, pls. 1-3.

Comprises in brief the results of the original investigations of Prof. Foote on many animal and human femora. It shows that the minute structure of the bones differs remarkably according to order and species, as well as at different stages of development of the same individual. There are also probably racial differences in the human family. The majority of

FOOTE, J. S.—Continued.

the human material utilized by Prof. Foote was from the anthropological collections of the National Museum.

HOUGH, WALTER. Culture of the ancient pueblos of the upper Gila River region, New Mexico and Arizona. Second Museum-Gates Expedition.

Bull. U. S. Nat. Mus., No. 87, Mar. 21, 1914, pp. i-xiv, 1-139, pls. 1-29, figs. 1-348.

A study of the material collected by the second Museum-Gates expedition on the upper Blue, San Francisco and Tularosa rivers, in the course of which a large series of articles from ceremonial and other caves was gathered. Excavations were also made in several pueblos, and thus a rather wide view of the culture of this region was obtained. Natural history specimens were also secured and their discussion forms the first chapter of the book. Following this, the objects of stone, bone and shell, of pottery or wood, or textiles, are described, as well as various classes of religious objects. The concluding chapter describes a number of mummies from the ruins.

HRDLÍČKA, ALEŠ. A report on a collection of crania and bones from Sorrel Bayou, Iberville Parish, Louisiana.

Journ. Acad. Nat. Sci. Phila., 16, 1913, pp. 95-99, figs. 1, 2.

Report on the measurements and examination of seventeen skulls and parts of one skeleton received in the spring of 1913, from Mr. Clarence B. Moore, and proceeding in the main from Sorrel Bayou, Iberville Parish, Louisiana. It is a continuation of the reports on the skeletal material collected by Mr. Moore during his explorations and preparatory to a contemplated and more comprehensive anthropological survey of the southern part of the United States. The report brings out a number of inter-

HRDLIČKA, ALEŠ—Continued.

estimating anthropological and pathological notes, as do also the preceding reports.

— Anthropological work in Peru in 1913, with notes on the pathology of the ancient Peruvians.

Smithsonian Misc. Colls., 61, No. 18, Feb. 12, 1914, pp. 1-69, pls. 1-26, figs. 1-3.

A report on the continuation of the writer's explorations along the coast and in the Sierras of Peru, with a summary of the observations on pathological conditions noted on the ample and mostly prehistoric skeletal material. Among the more important results of the work are (1) a definite tracing of the physical type of the pre-Columbian inhabitants of the coast and mountains over an extensive region, and (2) the definite determination that the Chimu and the Nasca peoples were physically integral parts of the predominantly brachycephalic coast population. Both the Nasca and the Chimu cultures continued to historic times. The pathology of pre-Columbian times shows absence or great scarcity of some of the most important modern constitutional diseases, as well as some peculiar local morbid conditions. Numerous ruins heretofore unknown to science were found. During the exploration no trace whatever was found of geologically ancient or even old prehistoric human remains.

— Restes, dans l'Asie orientale de la race qui a peuplé l'Amérique.

Congrès Int. d'Anthropologie d'Archéologie préhistoriques. Compte Rendu de la XIV^{me} session, Genève, 2, 1912, pp. 409-414. (Printed in 1914.)

Embraces in succinct form the results of the writer's observations on physical types resembling the American Indian in Siberia and Mongolia. (See

HRDLIČKA, ALEŠ—Continued.

abstract of writer's publication on same subject in report of National Museum for 1912-1913, p. 172.)

— Débris en Asie orientale d'un peuple qui jadis peuplait l'Amérique.

Travaux de la Sous-Section de Troitskoye-Kiakhta, Section du pays d'Amour de la Société Impériale Russe de Géographie, 15, livr. 2, 1912 (1913), pp. 70-75.

Reprint in Russian of the paper previously cited.

— Early man in South America.

Proc. 18th Int. Congress of Americanists, 1, London, 1914, pp. 10-21.

A synopsis of data relating to early man in South America, showing that there is actually no scientific basis for acceptance of the conclusion that remains of geologically ancient man or his precursors have been found on that continent.

— The derivation and probable place of origin of the North American Indian.

Proc. 18th Int. Congress of Americanists, 1, London, 1914, pp. 57-62.

This paper, which was read before the 18th International Congress of Americanists held in London, 1912, gives in concrete form historical notes and the present anthropological evidence regarding the derivation of the American Indian and his probable affiliation with the Eastern Asiatics of early prehistoric (probably early Neolithic) times.

— Report on two crania from Saline Creek, Mo., collected by D. I. Bushnell, jr.

Brief description of two interesting skulls, printed on p. 656 of the paper, entitled "Archeological investigations in Ste. Genevieve County, Missouri," by David I. Bushnell, jr., above cited.

MAMMALS.

ALLEN, GLOVER M. A new bat from Tonkin.
Proc. Biol. Soc. Washington, 26, Dec. 20, 1913, pp. 213, 214.

— Notes on the birds and mammals of the Arctic coast of East Siberia. Mammals.
Proc. New England Zoöl. Club, 5, Apr. 9, 1914, pp. 49-66, pl. 1.

ALLEN, J. A. Revision of the Melanomys group of American Muridae.
Bull. Amer. Mus. Nat. Hist., 32, Art. 36, Nov. 17, 1913, pp. 533-555, pl. 68.

— Review of the genus Microscirus.
Bull. Amer. Mus. Nat. Hist., 33, Art. 11, Feb. 26, 1914, pp. 145-165.

ANDREWS, ROY C. The California gray whale (Rhachianectes glauces Cope).
Memoirs Amer. Mus. Nat. Hist., (n. s.) 1, pt. 5, Monogr. of the Pacific Cetacea. 1, Mar. 1914, pp. 227-287, pls. 19-27, figs. 1-22.

A skeleton in the collection of the National Museum is figured in this paper.

BAILEY, VERNON. Two new subspecies of North American beavers.
Proc. Biol. Soc. Washington, 26, Oct. 23, 1913, pp. 191-194.

Describes *Castor canadensis mexicanus* and *Castor canadensis michiganensis*.

GOLDMAN, E. A. Descriptions of five new mammals from Panama.
Smithsonian Misc. Colls., 63, No. 5, Mar. 14, 1914, pp. 1-7.

Describes *Chirocectes panamensis*, *Lonchophylla concava*, *Lutra repanda*, *Felis pirrensis* and *Actus zonalis* as new species.

— A new bat of the genus *Mimon* from Mexico.
Proc. Biol. Soc. Washington, 27, May 11, 1914, pp. 75, 76.

Describes *Mimon cozumelae* as new.

GOLDMAN, E. A. The status of *Cebus* imitator Thomas.
Proc. Biol. Soc. Washington, 27, May 11, 1914, p. 99.

— The status of certain American species of *Myotis*.
Proc. Biol. Soc. Washington, 27, May 11, 1914, p. 102.

HELLER, EDMUND. New races of antelopes from British East Africa.
Smithsonian Misc. Colls., 61, No. 7, July 31, 1913, pp. 1-13.

Describes *Nesotragus moschatus akeleyi*, *N. m. descripticola*, *Rhynchotragus kirki nyikae*, *Gazella granti roosevelti*, *G. g. sercugetae*, *G. g. raineyi*, *Cephalophus monticola musculooides*, *Reduncus reduncus tohi*, *Adenota kob alura*.

— New antelopes and carnivores from British East Africa.
Smithsonian Misc. Colls., 61, No. 13, Sept. 16, 1913, pp. 1-15.

Describes *Tragelaphus scriptus olivaceus*, *Ammelaphus imberbis australis*, *Strepsiceros strepsiceros bea*, *Kobus defassa raineyi*, *Kobus ellipsiprymnus kuru*, *Oreotragus oreotragus aureus*, *Proteles cristatus termites*, *Nandinia binotata arborea*, *Mungos dentifer*, *Mungos albicandus ferox*, *Bdeogale crassicauda omnivora*, *Ictonyx capensis albescens*, *Felis ocreata nandae*, and *F. o. taitæ*.

— The white rhinoceros.
Smithsonian Misc. Colls., 61, No. 1, Oct. 11, 1913, pp. 1-77, pls. 1-31.

— New races of ungulates and primates from Equatorial Africa.
Smithsonian Misc. Colls., 61, No. 17, Oct. 21, 1913, pp. 1-12.

Describes *Gorgon albojubatus mearnsi*, *Bubalis leleci keniæ*, *Sylvicapra grimmia deserti*, *Colebus abyssinicus roosevelti*, *C. a. percivali*, *C. a. terrestris*, *Lasiopyga leucampax mauæ*, *L. albogularis maritima*, *L. a.*

HELLER, EDMUND—Continued.

kima, *L. ascanius kaimosa*, *L. pygargyra tumbili* and *L. p. arenaria*.

— New races of carnivores and baboons from Equatorial Africa and Abyssinia.

Smithsonian Misc. Colls., 61, No. 19, Nov. 8, 1913, pp. 1-12.

Describes *Aonyx capensis helios*, *Felis leo roosevelti*, *F. l. nyanzae*, *F. pardus fortis*, *F. p. chui*, *Acinonyx jubatus relax*, *A. j. raineyi*, *Papio anubis testes* and *P. a. vigilis*.

— Four new subspecies of large mammals from Equatorial Africa.

Smithsonian Misc. Colls., 61, No. 22, Jan. 26, 1914, pp. 1-7.

Describes *Hippopotamus amphibius kiboko*, *Phacochoerus africanus bufo*, *Equus quagga cunninghami* and *Crocuta crocuta fisi*.

— New subspecies of mammals from Equatorial Africa.

Smithsonian Misc. Colls., 63, No. 7, June 24, 1914, pp. 1-12.

Describes *Thos adustus bweha*, *T. a. notatus*, *T. aureus bea*, *T. mesomelas elyonae*, *T. m. momillani*, *Heliosciurus rufobrachiatus shindi*, *Tatera nigracauda percivali*, *Epimys kaiseri turneri*, *E. conchae ismaili*, *E. kaiseri centralis*, *Mus gratus soricoides*, *Enomys hypoxanthus vallicola*, *Arricanthis abyssinicus virescens*, *Lemniscomys dorsalis mearnsi*, and *Acomys ignitus montanus*.

— (See also under Theodore Roosevelt.)

HOLLISTER, N. Three new subspecies of grasshopper mice.

Proc. Biol. Soc. Washington, 26, Dec. 20, 1913, pp. 215, 216.

Describes *Oryzomys torridus clarus*, *O. leucogaster capitulatus* and *O. l. breviauritus*.

HOLLISTER, N. A review of the Philippine land mammals in the United States National Museum.

Proc. U. S. Nat. Mus., 46, No. 2028, Dec. 31, 1913, pp. 299-341, pls. 27-29.

Describes as new *Pachyura occultidens*, *Taphonycteris capito*, *Miniopterus paulinus*, *Charephon luzonus*, *Nannosciurus surrutilus*, *Epimys coloratus*, *E. robiginosus*, *E. mayonicus*, *E. leucophaxatus*, *E. vigoratus*, *E. basilanus*, *E. ornatus*, *E. benguetensis*, *Lemnomyss mearnsi*, *L. picinus*, *Apomys microdon*, *Pithecius mindorus* and *Rusa nigellus*.

— A new name for the marmot of the Canadian Rockies.

Science, (n. s.), 39, No. 998, Feb. 13, 1914, p. 251.

Marmota oxytona is substituted for the preoccupied name, *Marmota sibila*.

— Four new neotropical rodents.

Proc. Biol. Soc. Washington, 27, Mar. 20, 1914, pp. 57-59.

Describes *Prachimys rubellus*, *Myocaster coypus santacruzae*, *Lagostomus maximus petilidens* and *Hydrochærus hydrochæris notialis*.

— Four new mammals from tropical America.

Proc. Biol. Soc. Washington, 27, May 11, 1914, pp. 103-106.

Describes *Philander centralis*, *Nectomys squamipes pollens*, *Cebus margaretae* and *Cebus capucinus limitatus*.

HOWELL, ARTHUR H. Ten new marmots from North America.

Proc. Biol. Soc. Washington, 27, Feb. 2, 1914, pp. 13-18.

Describes *Marmota monax rufescens*, *M. m. preblorum*, *M. flaviventer parvula*, *M. f. nosophora*, *M. f. luteola*, *M. f. warreni*, *M. f. obscura*, *M. caligata cascadensis*, *M. c. nivaria*, and *M. c. sheldoni*.

HOWELL, ARTHUR H. Notes on the skunks of Indiana with a correction.

Proc. Biol. Soc. Washington, 27, May 11, 1914, p. 100.

— Revision of the American harvest mice (genus *Reithrodontomys*).

North Amer. Fauna, 36, June 5, 1914, pp. 1-97, pls. 1-7, figs. 1-6.

Describes as new *Reithrodontomys megalotis nigrescens*, *R. amoles*, *R. fulvescens chiapensis*, *R. f. nelsoni*, *R. f. mustelinus*, *R. rufescens luteolus*, *R. allenii*, and, as a new subgenus, *Aporodon*.

JACKSON, HARTLEY H. T. New moles of the genus *Scalopus*.

Proc. Biol. Soc. Washington, 27, Feb. 2, 1914, pp. 19-21.

Describes the following as new: *Scalopus aquaticus howelli*, *S. a. machrinoides*, *S. a. pulcher*, *S. a. caryi*, and *S. inflatus*.

— New moles of the genus *Scapanus*.

Proc. Biol. Soc. Washington, 27, Mar. 20, 1914, pp. 55, 56.

Describes *Scapanus latimanus sericatus* and *S. l. grinnelli*.

LYON, MARCUS WARD, jr. Treeshrews: an account of the mammalian family *Tupaiidae*.

Proc. U. S. Nat. Mus., 45, No. 1976, Nov. 29, 1913, pp. 1-188, pls. 1-11, figs. 1-15, 5 maps,

Describes as new *Tupaia longipes salatana*, *T. riabus*, *T. anambe*, *T. montana baluensis*, *T. gracilis edarata*, *Anathana*, *Anathana wroughtoni*, *A. pallida*, *Dendrogale melanura baluensis*, *Tana*, *Tana tana besara*, *T. t. utara*, *T. t. tanaeus*, *T. linga*, *T. cervicalis masae* and *T. pallana*.

MEARNS, EDGAR A. Descriptions of three new raccoons from the Mexican Boundary region.

Proc. Biol. Soc. Washington, 27, Mar. 20, 1914, pp. 63-67.

Describes *Procyon lotor fuscipes*, *P. l. ochraceus* and *P. l. californicus*.

MEARNS, EDGAR A. The earliest systematic name for the tuoza or Georgia pocket gopher.

Proc. Biol. Soc. Washington, 27, May 11, 1914, p. 102.

MILLER, GERRIT S., jr. Notes on the bats of the genus *Molossus*.

Proc. U. S. Nat. Mus., 46, No. 2013, Aug. 23, 1913, pp. 85-92.

Describes as new *Molossus fortis* and *M. debilis*.

— Two new murine rodents from Baltistan.

Proc. Biol. Soc. Washington, 26, Oct. 23, 1913, pp. 197, 198.

Describes *Alticola glacialis* and *Epimys rattus shigarius*.

— Fifty-one new Malayan mammals.

Smithsonian Misc. Colls., 61, No. 21, Dec. 29, 1913, pp. 1-30.

Describes *Paradoxurus parvus*, *P. hermaphroditus rarus*, *P. h. senex*, *P. h. fuscus*, *P. h. pallens*, *P. h. puynax*, *P. h. sucer*, *P. h. pulcher*, *P. h. canus*, *P. h. simplex*, *Arctogalidia macra*, *A. bicolor*, *A. mima*, *A. depressa*, *Epimys pannellus*, *E. tingi*, *E. fulmineus*, *E. roa*, *E. mara*, *E. tua*, *E. rattus turbidus*, *E. r. pauper*, *E. r. ricalana*, *E. r. dentatus*, *E. r. insularis*, *E. r. exsul*, *E. r. fortunatus*, *E. borneanensis*, *E. rictor*, *E. pollicens*, *E. potens*, *E. valens*, *E. luta*, *E. stentor*, *E. vociferans insularum*, *E. r. clarae*, *E. lepidus*, *E. gracilis*, *E. solus*, *Sciurus astristriatus*, *S. dulitensis dilutus*, *S. atricapillus atroz*, *S. humilis*, *Lariscus berdmorei amotus*, *Ratufa melanopepla peninsulae*, *R. phoenopepla*, *R. celenopepla*, *Petaurus mimicus*, *Pycsbytis corvus*, *P. australis*, *P. vigilans*.

— Revision of the bats of the genus *Glossophaga*.

Proc. U. S. Nat. Mus., 46, No. 2034, Dec. 31, 1913, pp. 413-429.

Describes as new *Glossophaga soricina microtis* and *G. s. valens*.

MILLER, GERRIT S., jr. Elliot's review of the Primates.

Science, (n. s.), 39, No. 992, Jan. 2, 1914, pp. 28-31.

— Two new murine rodents from eastern Asia.

Proc. Biol. Soc. Washington, 27, May 11, 1914, pp. 89-91.

Describes *Apodemus pratorum* and *Epimys norvegicus sacer*.

NELSON, E. W. A new bat from the eastern United States.

Proc. Biol. Soc. Washington, 26, Aug. 8, 1913, pp. 183, 184.

— Description of a new subspecies of moose from Wyoming.

Proc. Biol. Soc. Washington, 27, Apr. 25, 1914, pp. 71-73.

Describes *Alces americanus shirasi*.

ROOSEVELT, THEODORE, and EDMUND HELLER. Life-histories of African game animals.

Charles Scribner's Sons, New York, Apr., 1914,

ROOSEVELT, THEODORE, and EDMUND HELLER—Continued.

2 vols., 8vo., pp. i-xxvii, i-x, 1-798, 50 illustrations, 40 maps.

A systematic and popular account of the larger carnivores, the pigs, the hippopotamus, the giraffes, the antelopes, the hook-hipped and the square-mouthed rhinoceros, the zebras, and the elephant of British East Africa and Uganda. Technical details are based chiefly on material in the National Museum. (Smithsonian African Expedition and Rainey African Expedition.)

TRUE, FREDERICK W. Description of *Mesoplodon mirum*, a beaked whale recently discovered on the coast of North Carolina.

Proc. U. S. Nat. Mus., 45, No. 2007, Nov. 29, 1913, pp. 651-657, pls. 52-57, fig. 1.

A detailed description of the species, originally described in *Smithsonian Misc. Colls.* 60, No. 25, March 14, 1913.

BIRDS.

BARTSCHI, PAUL. Birds observed on the Florida Keys on April 25 to May 9, 1913.

Carnegie Inst. of Washington, Year Book No. 12, 1913, pp. 172-175.

Birds observed on the Keys between Miami and the Tortugas.

— Mourning warbler (*Oporornis philadelphicus*) in Florida.

Auk, 31, No. 1, Jan., 1914, p. 103.

Records the mourning warbler for the first time in the State of Florida.

BEEBE, C. WILLIAM. Preliminary pheasant studies.

Zoologica, 1, No. 15, Apr., 1914, pp. 261-285.

Notes on thirteen genera of pheasants, based on the author's studies in various museums.

CHAPMAN, FRANK M. Diagnoses of apparently new Colombian birds, 2.

Bull. Amer. Mus. Nat. Hist., 33, Art. 12, Mar. 19, 1914, pp. 167-192, pl. 13 (map of s. w. Colombia).

The following species and subspecies are described as new, and their relationships with previously known forms are fully discussed: *Ortalis columbiana caucæ*, *Porphyriops melanops bogotensis*, *Fullea americana columbiana*, *Irobrychus exilis bogotensis*, *Stenopsalis cayennensis monticola*, *Fornicarius analis connectens*, *Craspedopion pacificus*, *C. aequinoctialis flavus*, *Euscarthmus septentrionalis*, *Mionectes olivaceus pallidus*, *Campstostoma caucæ*, *Pitangus sulphuratus caucensis*, *Pheugopedius mystacalis omaurogaster*, *Henicorhina leucophrys brunneiceps*, *Planesticus caucæ*, *Saltator atripennis caniceps*, *Myospiza*

CHAPMAN, FRANK M.—Continued.

cherrii, *Arremonops conirostris*
inxpectata, *Atlapetes fuscoc-*
olivaceus, *A. pallidinuchus ob-*
scurior, *Cærba mexicana caeca*,
Tangara guttata tolmei, *T.*
aurulenta occidentalis, *T. florida*
auriceps, *Chlorospingus flavigu-*
laris marginatus, *Ostินops sin-*
capitalis neglectus, *Agelaius*
icterocephalus bogotensis, and
Icterus hondae.

CLARK, AUSTIN HOBART. A new race
of the mandarin duck from southern
Japan.

Proc. Biol. Soc. Wash-
ington, 27, May 11,
1914, p. 87.

Aix galericulata brunneescens
is diagnosed as new.

CLARK, HUBERT LYMAN. Anatomical
notes on *Todus*, *Oxyruncus* and *Spin-*
dalnis.

Auk, 30, No. 3, July,
1913, pp. 402–406.

Notes on the anatomy of
three tropical American genera
of birds.

GEE, N. GIST. (See under Lacy L.
Moffett.)HOWELL, ARTHUR H. Descriptions of
two new birds from Alabama.

Proc. Biol. Soc. Wash-
ington, 26, Oct. 23,
1913, pp. 199–202.

Corvus brachyrhynchos paulus
and *Pipilo erythrophthalmus can-*
aster are described as new, and
the type locality of *Corvus b.*
brachyrhynchos is fixed as the
vicinity of Boston, Mass.

MEARNs, EDGAR A. Descriptions of
three new African weaver-birds of
the genera *Estrilda* and *Granatina*.

Smithsonian Mis c.
Colls., 61, No. 9,
July 31, 1913, pp.
1–4.

Estrilda rhodopyga polia, *E. r.*
hypochra, and *Granatina ianthi-*
nogaster roosevelti are new
forms.

— Descriptions of four new Afri-
can thrushes of the genera *Plan-*
esticus and *Geocichla*.

Smithsonian Mis c.
Colls., 61, No. 10,
Aug. 11, 1913, pp.
1–5.

MEARNs, EDGAR A.—Continued.

The new forms are *Planesti-*
cus helleri, *P. olivaceus pollus*
Geocichla piaggio keniensis, and
G. gurneyi raineyi.

— Descriptions of six new African
birds.

Smithsonian Mis c.
Colls., 61, No. 11,
Aug. 30, 1913, pp.
1–5.

The following new forms are
described: *Cisticola robusta*
abaya, *C. r. tana*, *C. subrufica-*
pilla bodessa, *C. s. fricki*, *C.*
natalensis nilotica, and *Pyromec-*
lana flammiceps changanicensis.

— Descriptions of five new Afri-
can weaver-birds of the genera *Othy-*
phantes, *Hypargos*, *Aidemosyne*, and
Lagonosticta.

Smithsonian Mis c.
Colls., 61, No. 14,
Sept. 20, 1913, pp.
1–5.

Othyphantes fricki, *Hypargos*
nireoguttatus macrospilotus,
Aidemosyne inornata, *A. cantans*
meridionalis, and *Lagonosticta*
rubricata fricki are designated
as new.

— Descriptions of ten new Afri-
can birds of the genera *Pogonocichla*,
Cossypha, *Bradypterus*, *Sylvietta*,
Melaniparus and *Zosterops*.

Smithsonian Mis c.
Colls., 61, No. 20,
Nov. 29, 1913, pp.
1–8.

Descriptions of the following
new subspecies are given: *Pogo-*
nocichla cucullata helleri, *Cos-*
sypha natalensis ganguensis, *C.*
n. intensa, *Bradypterus batocer-*
lus fraterculus, *Sylvietta whytii*
abyensis, *S. leucophrys keniensis*,
S. brachyura tavetensis,
Melaniparus afer fricki, *Zoste-*
rops senegalensis fricki, and *Z.*
virens ganguensis.

— Descriptions of eight new Afri-
can bulbuls.

Smithsonian Mis c.
Colls., 61, No. 25,
Feb. 16, 1914, pp.
1–6.

Phyllastrephus strepitans
fricki, *P. cerviniventris lönne-*
bergi, *P. placidus keniensis*,
Chlorocichla flaviventris meru-

MEARNS, EDGAR A.—Continued.
ensis, *Andropadus fricki*, *A. f. kitungensis*, *Stelgidochla latirostris pallida*, and *S. l. saturata* are described as new.

MOFFETT, LACY I. and N. GIST GEE.
 Check list of birds of the lower Yangtse valley from Hankow to the sea. [With an appendix by Chas. W. Richmond.]

Journ. N. China Branch, Roy. Asiatic Soc., 44, 1913, pp. 113-143, 143a-143f.

A briefly annotated list of birds of the region indicated in the title.

OVERHOLSER, HARRY C. Four new birds from Newfoundland.

Proc. Biol. Soc. Washington, 27, Mar. 20, 1914, pp. 43-54.

Four new subspecies are described, under the names *Dryobates pubescens microleucus*, *Bubo virginianus neochorus*, *Perisoreus canadensis sanfordi*, and *Pinicola enucleator eschatus*. The type locality of *Pinicola c. leucura* is fixed as the city of Quebec, Canada.

— A monograph of the genus *Chordeiles* Swainson, type of a new family of goatsuckers.

Bull. U. S. Nat. Mus., No. 86, Apr. 6, 1914, pp. i-vii, 1-123, pls. 1-6.

A monographic treatment of nighthawks (genus *Chordeiles*), for which the family *Chordellidae* is proposed. *Chordeiles virginianus howelli*, *C. acutipennis micromeris*, *C. a. inferior*, *C. rufipennis ayosticulus*, and *C. r. zaleucus* are new subspecies. *Setochalcis* is a new genus for the whippoorwills of the *Caprimulgus vociferus* group.

— *Poocetes gramineus confinis* in Louisiana.

Proc. Biol. Soc. Washington, 27, May 11, 1914, p. 101.

Record of this subspecies from Louisiana.

OGILVIE-GRANT, W. R. On a small collection of birds from Henderson Island, South Pacific.

Ibis, ser. 10, 1, No. 3, July, 1913, pp. 343-350, pl. 9.

OGILVIE-GRANT, W. R.—Continued.

An account of 10 species collected on Henderson Island, with extended remarks on *Ptilopus insularis* and its ally, *P. coralensis*.

RICHMOND, CHAS. W. (See under Lacy I. Moffett and N. Gist Gee.)

RIDGWAY, ROBERT. The birds of North and Middle America: a descriptive catalogue of the higher groups, genera, species, and subspecies of birds known to occur in North America, from the Arctic lands to the Isthmus of Panama, the West Indies and other islands of the Caribbean Sea, and the Galapagos Archipelago. Pt. 6. Family Picidae—The Woodpeckers. Family Capitonidae—The Barbets. Family Ramphastidae—The Toucans. Family Buccanidae—The Puff Birds. Family Galbulidae—The Jacamars. Family Alcedinidae—The Kingfishers. Family Todidae—The Todies. Family Momotidae—The Motmots. Family Caprimulgidae—The Goatsuckers. Family Nyctibiidae—The Potoos. Family Tytonidae—The Barn Owls. Family Bubonidae—The Eared Owls.

Bull. U. S. Nat. Mus., No. 50, pt. 6, Apr. 8, 1914, pp. i-xx, 1-882, pls. 1-36.

The present volume contains the suborders Picariae, Anisodactyla, Nycticoracidae and Strigidae, embracing the 12 families above enumerated and 76 genera, with 369 species and subspecies, and additional extrazonal forms described in the keys. *Hypnelus ruficollis coloratus*, *Otus asio hasbrouckii*, *O. a. brevsteri*, *Pulsatrix perspicillata saturata*, *Micropallass whitneyi sanfordi* and *M. w. idoneus* are described as new. *Psilopornis* is a new genus of Galbulidae.

RILEY, J. H. Note on *Anas cristata* Gmelin.

Proc. Biol. Soc. Washington, 27, May 11, 1914, p. 100.

The generic name *Lophonetta* is proposed for this species.

SHUFELDT, R. W. On the patella in the Phalaenocoracidae.

Proc. Zool. Soc. London, pt. 3, Sept., 1913, pp. 393-402, pl. 61.

Notes on the patella in the cormorant family.

SWARTH, HARRY S. The status of Lloyd's Bush-tit as a bird of Arizona.

Auk, 30, No. 3, July, 1913, pp. 399-401.

From an examination of ample material, the writer concludes that *Psaltriparus melanotis* *lloydii* does not occur in Arizona, and that *P. sanctaritæ* is a synonym of *P. plumbeus*.

— A study of a collection of geese of the *Branta canadensis* group from the San Joaquin Valley, California.

Univ. Cal. Pub. Zool., 12, No. 1, Nov. 20, 1913, pp. 1-24, pls. 1, 2, figs. A-II.

Three forms of the *Branta canadensis* group are found to occur in California, *B. c. canadensis* being the breeding subspecies. The author finds no definite records of *B. c. occidentalis* for the State.

TODD, W. E. CLYDE. Preliminary diagnoses of apparently new birds from tropical America.

REPTILES AND BATRACHIANS.

RUTHVEN, ALEXANDER G. Description of a new species of Basiliscus from the region of the Sierra Nevada de Santa Marta, Colombia.

Proc. Biol. Soc. Washington, 27, Feb. 2, 1914, pp. 9-12, pl. 1.

Basiliscus barbouri is described as new, and a paratype of the species was presented to the Museum.

— Description of a new engystomatid frog of the genus Hypopachus.

Proc. Biol. Soc. Washington, 27, May 11, 1914, pp. 77-79.

Hypopachus pearsei is described as new, and a paratype was presented to the Museum.

THOMPSON, JOSEPH C. The variation exhibited by mainland and island specimens of the Hibakari snake, *Natrix vibakari* (Boie).

TODD, W. E. CLYDE—Continued.

Proc. Biol. Soc. Washington, 26, Aug. 8, 1913, pp. 169-174.

The following forms are described as new: *Catamenia oreocophila*, *Tanagra rufiventris colorata*, *Gymnolimnas yuracarensis*, *Basiliscus auricapillus viridescens*, *Hemispingus basilicus*, *Pheugopedius genibarbis boliviensis*, *Planesticus olivaceus sancte-martæ*, *Todirostrum schistaceiceps griseolum*, *Rhynchocelus flaviventris aurulentus*, *Elenia boliviana*, *Leptopogon amarocephalus diversus*, *Myiarchus (?) fortirostris*, *Orodytes striaticollis columbianus*, *Microtriceus brunneicapillus dilutus*, *Thamnophilus doliatus heterocercus*, *Ramphococcyx melanurus pallidus*, *Hypocnemis flavaescens humilis*, *Myrmeciza solei* *affinis*, *M. schistacea*, *Hylophylax consobrina*, *Sclateria navia diaphora*, *Xenops genibarbis neglectus*, *Xenicopsis striolatus*, *Dendrocolaptes polystomus*, *Picolaptes bivittatus certiorius*, *Pheuctornis strigularis ignobilis*, *Agyrtria hollandi*, *Saucerottia tobaci monticola*, *Metallura tyrianthina oreopola*, *Microstilbon* (new genus), *M. insperatus*, *Electron platyrhynchus medianum*, *Pyrrhura viridicata*, and *Rallus longirostris leucocephalus*.

THOMPSON, JOSEPH C.—Continued.

Proc. U. S. Nat. Mus., 46, No. 2020, Sept. 30, 1913, pp. 157-160.

Shows that the specimens from the Japanese Islands have more numerous ventrals than those from the opposite mainland. One-half of the specimens examined are in the National Museum.

— The variations exhibited by *Thamnophis ordinoides* (Baird and Girard), a gartersnake inhabiting the Sausalito Peninsula, California.

Proc. U. S. Nat. Mus., 47, No. 2051, May 16, 1914, pp. 351-360.

A minute study of variation in 50 snakes from a limited habitat. Nearly the entire material was presented by the author to the National Museum.

FISHES.

FISK, MARY. A review of the fishes of the genus *Osmerus* of the California coast.

Proc. U. S. Nat. Mus.,
46, No. 2027, Nov.
25, 1913, pp. 291-
297, 1 fig.

GILBERT, CHARLES H. Two cottoid fishes from Monterey Bay, California.

Proc. U. S. Nat. Mus.,
47, No. 2049, May
20, 1914, pp. 135-
137, pl. 11.

JORDAN, DAVID STAAR, and WILLIAM FRANCIS THOMPSON. Notes on a collection of fishes from the Island of

JORDAN, DAVID STAAR, and WILLIAM FRANCIS THOMPSON—Continued. Shikoku in Japan, with a description of a new species, *Gnathopops iononis*.

Proc. U. S. Nat. Mus.,
46, No. 2011, Aug.
23, 1913, pp. 65-72,
figs. 1-5.

SNYDER, JOHN OTTERBEIN. The fishes of the streams tributary to Monterey Bay, California.

Bull. Bur. Fisheries,
32, No. 776, July 24,
1913, pp. 49-72, pls.
19-24, figs. 1-3.

MOLLUSKS.

BARTSCH, PAUL. Observations on mollusks among the Bahama Islands and the Florida Keys.

Smithsonian Misc. Colls., 60, No. 30, July 3, 1913, pp. 58-
62, figs. 65-67.

Calls attention to a collecting trip to the Bahama Islands and the Florida Keys, and the planting of Bahama Cerions upon the Florida Keys.

— New mollusks from the Bahama Islands.

Proc. U. S. Nat. Mus.,
46, No. 2016, Nov.
29, 1913, pp. 107-
109, pl. 3.

A report on a collection made by Mr. G. W. Pepper, of Providence, Rhode Island, in the Bahama Islands, in which the following new species are described: *Cerion (Strophiops) pepperi*, *Cepolis maynardi elevata*, *Leptinaria bahamensis*, *Varicella gracillima bahamensis*.

— Report of results of the planting of Bahama Cerions on the Florida Keys.

Carnegie Inst. of Washington, Year Book, No. 12, 1913,
pp. 169-172.

A detailed account of the results obtained in the breeding experiments of the Bahama Cerions planted on the Florida Keys a year ago.

BARTSCH, PAUL. (See also under William Healey Dall.)

DALL, WILLIAM HEALEY. New species of the genus *Mohnia* from the North Pacific.

Proc. Acad. Nat. Sci. Phila., Aug. 19, 1913, pp. 501-504.

The following new species are described: *Mohnia robusta*, *M. corbis*, *M. vernalis*, *M. siphonoides*, *M. exquisita*, *M. buccinoides*, *M. japonica*, *M. kurihana*, *M. hondoensis*. They are from Bering Sea and North Japan, dredged by the U. S. Fisheries Steamer Albatross, and the types are in the National Museum.

— The Belgian Antarctic Expedition.

Science (n. s.), 38, No. 988, Dec. 5, 1913, pp. 819, 820.

A review of the results of the voyage in the lines of Petrography and Tunicata.

— A new genus of Trochidæ.

Nautilus, 27, No. 8, Dec., 1913, pp. 86, 87.

The new genus and species *Vetulonta jeffreysi* and *V. galapagana* are described, with the latter as the generic type. The specimens are in the National Museum.

DALL, WILLIAM HEALEY. Note on *Clementia obliqua* Jukes-Brown.

Nautilus, 27, No. 9, Jan., 1914, pp. 103, 104.

Proof is given that the above species had been named *subdia-phana* by Carpenter in 1864, and that it is a native of the northwest coast of America and not of Porto Rico, as supposed. It is referable to the genus *Marci* of the Veneridae.

— Notes on some West American Pectens.

Nautilus, 27, No. 11, Mar., 1914, pp. 121, 122.

The group as represented on the west coast of North America is reviewed. *Pecten excavatus* of Valenciennes, not Anton, is renamed *P. cataractae*.

— Notes on West American oysters.

Nautilus, 28, No. 1, May, 1914, pp. 1-3.

The group is reviewed. *O. fisheri* is proposed for *O. jacchae* Rochebrune, not Linnaeus. *O. serra* and *O. tubulifera* from the tropical fauna are described as new. The material on which the review is based is in the National Museum.

— The life of the mollusca.

Science (n. s.), 39, No. 1016, June 19, 1914, pp. 910, 911.

A review of the volume so entitled by B. B. Woodward.

— Notes on some northwest coast Acmæas.

Nautilus, 28, No. 2, June, 1914, pp. 13-15.

Data derived from a revision of the species in the collection of the National Museum. New

DALL, WILLIAM HEALEY—Continued.

species indicated are: *Acmaea olympica* Dall, *A. emydia* Dall, *A. parallela* Dall, and *A. semirubida* Dall. Important changes in the coast line are suggested by the present distribution of the temperate and tropical species of the genus.

— and PAUL BARTSCH. New species of mollusks from the Atlantic and Pacific coasts of Canada.

Victoria Mem. Mus. Bull. No. 1, Oct. 23, 1913, pp. 139-146, pl. 10.

Descriptions of species dredged by the staff of the Dominion Geological and Natural History Survey. The types and eotypes are in the Victoria Memorial Museum and the U. S. National Museum. *Mangilia crebricostata* Carpenter, known only from a unique and defective specimen, is redescribed from better material; and the following new forms are named: *Turbanilla (Pyrgiscus) hecuba*, *Odostomia (Ervilia) cassandra*, *O. (E.) cyprina*, *O. (E.) hypatia*, and *O. (E.) skidegatensis*. All except the first mentioned are from the Queen Charlotte Islands, British Columbia.

PILSBRY, HENRY A. (assisted by C. MONTAGUE COOKE). Manual of Conchology structural and systematic, with illustrations of the species. Vol. 22. Achatinellidae.

Published by the Conchological Department, Acad. Nat. Sci., Phila., 1912-14, 8vo., pp. i-lviii, 1-428, pls. 1-63.

This volume is based in part on the collection of Achatinellidae in the National Museum, which was lent to Dr. Pilsbry for study.

PROTOTRACHEATA.

CLARK, AUSTIN HOBART. Piccole note su degli onychophora.

Zool. Anzeiger, 42, No. 6, July 18, 1913, pp. 253-255.

Records *Peripatus (Epiperipatus) simoni* from Marajo, Brazil; *P. (E.) trinidadensis* from Tobago, B. W. I., with a suggestion that the specimen

CLARK, AUSTIN HOBART—Continued.

from that Island may prove distinct. In which case the author proposes the name *P. (E.) broadwayi* for this form; *P. (P.) juanensis* from Vieques, P. R., and *Peripatoides novzealandiae* from New Zealand. The last three are in the National Museum.

CLARK, AUSTIN HOBART. Sopra una piccola collezione di Onychophora da Australia.

Zool. Anzeiger, 43, No. 7, Jan. 7, 1914, pp. 316-319.

Based upon a small collection of onychophores sent to the author by Prof. R. Hamlyn Harris, Director of the Queensland Museum, Brisbane. Three species are represented: *Peripatoides gilesii*, *P. orientalis* and *P. oviparus*. Duplicates of the last named are in the National Museum.

CLARK, AUSTIN HOBART. Notes on some specimens of a species of Onychophore (*Oroperipatus corradoi*) new to the fauna of Panama.

Smithsonian Misc. Colls., 63, No. 2, Feb. 21, 1914, pp. 1, 2.

Oroperipatus corradoi, previously known only from Ecuador, is here recorded from Ancon, Canal Zone.

INSECTS.

BARBER, HERBERT S. The remarkable life-history of a new family (Micro-malthidae) of beetles.

Proc. Biol. Soc. Washington, 26, Aug. 8, 1913, pp. 185-190, pl. 4.

— A new species of *Phengodes* from California (Coleoptera).

Can. Ent., 45, No. 10, Oct. 13, 1913, pp. 343, 344.

Describes a new species, *Phengodes bellus*, of which the paratype is in the National Museum.

— Notes on a wood-boring syrphid.

Proc. Ent. Soc. Washington, 15, No. 4, Jan. 22, 1914, pp. 151, 152.

Temnostoma bombylans was reared and a comparison of the various larvæ shows great differences in the armature of the spiracles, from which it appears that about four species are mixed under the single specific name.

— Notes on *Rhipidandri*. (Coleoptera)

Proc. Ent. Soc. Washington, 15, No. 4, Jan. 22, 1914, pp. 188-193.

Describes a new species of the genus *Eutomus* from Panama and gives notes on the other species in the collection of the National Museum.

— On interspecific mating in *Phengodes* and inbreeding in *Eros*. (Coleoptera).

Proc. Ent. Soc. Washington, 16, No. 1, Mar. 23, 1914, pp. 32-34.

BUSCK, AUGUST. New Microlepidoptera from British Guiana.

Insecutor Inscitiae Menstruus, 1, No. 7, July 21, 1913, pp. 88-92.

Describes eight new species belonging to several genera.

— A new *Acrolophus* from British Guiana.

Insecutor Inscitiae Menstruus, 1, No. 9, Sept. 15, 1913, p. 117.

— Two Microlepidoptera injurious to chestnut.

Proc. Ent. Soc. Washington, 15, No. 3, Oct. 2, 1913, pp. 102-104, 1 fig.

— Seven new Microlepidoptera from Mexico.

Insecutor Inscitiae Menstruus, 1, No. 11, Nov. 29, 1913, pp. 140-143.

— Note on a barkmining lepidopteron of the genus *Marmara* Clemens.

Proc. Ent. Soc. Washington, 15, No. 4, Jan. 22, 1914, p. 150.

Marmara fulgidella was reared from oak, the larvæ exhibiting the typical form for species of this genus.

— A new *Gracilaria* on Azalea.

Insecutor Inscitiae Menstruus, 2, No. 1, Jan. 31, 1914, pp. 1, 2.

Describes one new species which possibly may have been imported from Europe.

— The chestnut bastminer.

Insecutor Inscitiae Menstruus, 2, No. 1, Jan. 31, 1914, pp. 3, 4, 1 fig.

BUSCK, AUGUST—Continued.
Describes *Ectordemia phleophaea* and gives notes on the habits of the larva.

— Two Microlepidoptera on *Thurberia thespesioides*.
Proc. Ent. Soc. Washington, 16, No. 1, Mar. 23, 1914, pp. 30, 31.
Describes *Bucculatrix thurbericella*, new species, from Arizona.

— Seven new species of *Ethmia* from tropical America.
Insecutor Inscitiae Mensstraus, 2, No. 4, Apr. 24, 1914, pp. 53-57.

— New genera and species of Microlepidoptera from Panama.
Proc. U. S. Nat. Mus., 47, No. 2043, Apr. 30, 1914, pp. 1-67.
Describes the new genera *Fortinea*, *Atoponeura*, *Bethheca*, *Besicra*, *Galtica*, *Aroga*, *Pavotrichia*, *Promenesta* in the Gelechiidae; *Hamadera*, *Costoma*, *Rhindoma*, *Ancipa* in the Oecophoridae, and *Harmaclona* in the Tineidae, together with 123 new species.

CAUDELL, A. N. Some Bromeliadicolous Blattidae from Mexico and Central America.
Insecutor Inscitiae Mensstraus, 2, No. 5, June 8, 1914, pp. 76-80.
Describes three new species.

— The egg of *Pseudosermyle truncata* Caudell.
Proc. Ent. Soc. Washington, 16, No. 2, June 12, 1914, p. 96, 1 fig.

COCKERELL, T. D. A. New parasitic Hymenoptera of the genus *Eiphosoma*.
Proc. U. S. Nat. Mus., 46, No. 2010, Aug. 23, 1913, pp. 61-64.
Describes four new species and gives a table to the species occurring in North and Central America.

— Pseudomsaris bred in California.
Proc. Ent. Soc. Washington, 15, No. 3, Oct. 2, 1913, p. 107.
Describes one new subspecies.

COCKERELL, T. D. A. Bees visiting *Thurberia*.
Proc. Ent. Soc. Washington, 16, No. 1, Mar. 23, 1914, pp. 31, 32.
Describes *McLissodes thurberiae* and *Perdita punctifera*, and records two other species from Arizona.

— Names applied to the North American bees of the genera *Lithurgus*, *Anthidium*, and allies.
Proc. U. S. Nat. Mus., 47, No. 2045, May 7, 1914, pp. 87-94.

CRAWFORD, DAVID L. A contribution toward a monograph of the homopterous insects of the family Delphacidae of North and South America.
Proc. U. S. Nat. Mus., 46, No. 2041, Mar. 4, 1914, pp. 557-640, pls. 44-49.
Describes the new genera *Lepticus*, *Eucanya*, *Liburniella*, *Bakerella*, together with 35 new species and 8 new varieties. The types of 15 new species and 4 new varieties and paratypes of 2 new species are in the National Museum.

— A monograph of the jumping plant-lice or Psyllidae of the New World.
Bull. U. S. Nat. Mus., No. 85, June 3, 1914, pp. 1-186, pls. 1-30.
Describes the new genera *Aphalaroida*, *Heteropsylla*, *Leuronota*, *Hemitrioza*, *Ulleria*, *Tetragonocephala*, *Katacephala*, *Mitrapssylla* and the new subgenus *Anomocera*, together with 62 new species and 7 new varieties, and proposes one new name. The types of 33 of the new species and of 6 of the new varieties are in the National Museum.

CRAWFORD, J. C. Some bees from New Brunswick, with description of a new species of *Heriades*.
Can. Ent., 45, No. 8, Aug. 5, 1913, pp. 269-273.

— Another red species of the genus *Oligosita*.
Can. Ent., 45, No. 9, Sept. 12, 1913, pp. 311, 312.

CRAWFORD, J. C. Descriptions of new Hymenoptera, No. 8.

Proc. U. S. Nat. Mus.,
46, No. 2029, Dec.
23, 1913, pp. 343–
352, figs. 1–8.

Describes *Perilampidca*, *Xe-*
nomydar and *Xeomyar* (new
genera) and ten new species,
mostly from Trinidad, in the
Chalcidoidea and three new spe-
cies in the Serphidoidea.

— A revision of the braconid genus
Urosigalpus.

Insecutor Inscitiae Men-
struus, 2, No. 2, Feb.
28, 1914, pp. 22–27.

Gives a table of all the known
species and describes eight new
species, all from the United
States.

— Two new parasitic Hymenop-
tera from Arizona.

Proc. Ent. Soc. Wash-
ington, 16, No. 1,
Mar. 23, 1914, p. 29.

— Three new Hymenoptera.

Insecutor Inscitiae Men-
struus, 2, No. 3, Mar.
30, 1914, pp. 36–38.

Describes three Chalcidoidea
from the United States.

— Hymenoptera, superfamilies
Apoidea and Chalcidoidea, of the
Yale-Dominican Expedition of 1913.

Proc. U. S. Nat. Mus.,
47, No. 2048, Apr.
30, 1914, pp. 131–
134.

Describes four new species of
bees.

— The species of Perilampidae of
America north of Mexico.

Proc. Ent. Soc. Wash-
ington, 16, No. 2,
June 12, 1914, pp.
69–76.

Describes twelve new species,
giving tables of the species in
the region discussed.

— New parasitic Hymenoptera
from British Guiana.

Proc. Ent. Soc. Wash-
ington, 16, No. 2,
June 12, 1914, pp.
85–88.

Describes six new species of
Chalcidoidea and Serphidoidea.

CUSHMAN, R. A. A new species of the
Braconid genus *Phanerotoma* Wes-
mael.

Proc. Ent. Soc. Wash-
ington, 16, No. 2,
June 12, 1914, pp.
78, 79.

DYAR, HARRISON G. The species of
Calyptocome Warren.

Insecutor Inscitiae Men-
struus, 1, No. 7, July
21, 1913, pp. 79–87.

Gives a key to the American
species and describes thirteen
new species.

— Results of the Yale Peruvian
Expedition of 1911. Lepidoptera.

Proc. U. S. Nat. Mus.,
45, No. 2006, July
22, 1913, pp. 627–
649.

Describes forty new species,
two new subspecies and the
genus *Altiminas* (family Arc-
tiidae). In all 242 species are
listed.

— The separation of some species
of Lineodes.

Insecutor Inscitiae Men-
struus, 1, No. 8, Aug.
23, 1913, pp. 94–96,
pl. 2.

Gives a key to some of the
American species and describes
three new species.

— Descriptions of six new Pyrali-
dae from British Guiana.

Insecutor Inscitiae Men-
struus, 1, No. 8,
Aug. 23, 1913, pp.
98–100.

— A note on *Diathrausta nerinalis*
Walker.

Insecutor Inscitiae Men-
struus, 1, No. 8,
Aug. 23, 1913, pp.
100–102.

Describes four new forms of
this species.

— Notice of volume II, No. 4, of
Barnes and McDunnough's "Con-
tributions to the Natural History of
the Lepidoptera of North America."

Insecutor Inscitiae Men-
struus, 1, No. 8,
Aug. 23, 1913, pp.
102–106.

DYAR, HARRISON G.—Continued.

Gives the synonymy of many of the species described as new in this article and describes one new species from Cuba.

— Note on the American silvery species of *Argyria*.

Insecutor Inscitiae Menstruus, 1, No. 9, Sept. 15, 1913, pp. 111-114.

Gives a key to the American species which have silvery white ground color and describes seven new species.

— An additional note on *Calyptocome*.

Insecutor Inscitiae Menstruus, 1, No. 9, Sept. 15, 1913, p. 120.

— Notes on the species of *Galasa* Walker.

Insecutor Inscitiae Menstruus, 1, No. 10, Oct. 30, 1913, pp. 125-129.

Gives a key to the American species and describes five as new.

— A new pyralid from Newfoundland.

Insecutor Inscitiae Menstruus, 1, No. 11, Nov. 29, 1913, p. 139.

Describes *Pyrausta beddeci*, sp. nov.

— Two new Phycitinae from Montana.

Insecutor Inscitiae Menstruus, 2, No. 1, Jan. 31, 1914, p. 2.

— Four new Lepidoptera from British Guiana.

Insecutor Inscitiae Menstruus, 2, No. 1, Jan. 31, 1914, pp. 4-6.

Describes three hesperids and one ilparid.

— A note on *Phobolosia* and *Melanomma*.

Insecutor Inscitiae Menstruus, 2, No. 1, Jan. 31, 1914, pp. 8-10.

Gives a table of the North American species of the genus *Phobolosia* and describes one new species.

DYAR, HARRISON G. The pericopid larvae in the National Museum.

Insecutor Inscitiae Menstruus, 2, No. 4, Apr. 24, 1914, pp. 62-64.

Gives descriptions of the larvae of various species, together with the references to the places of publication where larvae of species in these genera have been described previously.

— The noctuid moths of the genera *Palindia* and *Dyomyx*.

Proc. U. S. Nat. Mus., 47, No. 2046, May 7, 1914, pp. 95-116.

Sixteen new species are described in the genus *Eulepidotis* (*Palindia*) and one new species in *Dyomyx*. Tables of the species of both genera are given.

— Report on the Lepidoptera of the Smithsonian Biological Survey of the Panama Canal Zone.

Proc. U. S. Nat. Mus., 47, No. 2050, May 20, 1914, pp. 139-350.

This paper treats of the Macrolepidoptera and describes the new genera *Otaucusesis* in the Nymphalidae; *Gaudator*, *Palaozana*, *Serincia*, *Abrochocis*, *Geridiels*, *Anæne*, *Dixanæne*, *Saozana*, in the Lithosiidae; *Ablita*, *Dymba*, *Araopterella*, *Charoblemma*, *Gelenipsa*, *Via*, *Prodosia*, *Egchiretas*, *Pogopus*, *Cola*, *Hopothia*, *Crambophilia*, and *Tineocephala* in the Noctuidæ; *Unduzia* in the Megalopygidæ; *Ca* in the Dalceridae; *Parambia*, *Homophysodes*, *Escandia*, *Eobrena*, *Gephyrella*, *Restidia*, *Zamanna*, *Craftsia*, *Chenevadia*, *Torotambe*, *Deopteryx*, *Replicia*, *Ocoba*, *Passclysis*, *Conotambe*, *Dismidila*, *Chalcoëlopsis*, *Taboga*, *Genopaschia*, *Pocopaschia*, *Stenopaschia*, *Glossopaschia*, *Difundella*, *Anypsipyla*, *Drescoma*, *Zamagiria*, *Cabima*, *Chorrera*, *Homalopalpia*, *Illatila*, *Anthopteryx*, *Bema*, *Relmis*, *Moerbes*, *Harnocha*, *Eurythmasis*, *Harnochina*, *Hypermescinia*, *Calamophaeps*, *Comotia*, *Strymax*, *Microphycta*, *Microphestia*, *Micromescinia*, *Tintilinoa* and *Schenecatidia* in the Pyralidae; together

DYAR, HARRISON G.—Continued.

with 474 new species, 6 new subspecies and 5 new varieties. Thirteen of the new species and one of the new varieties described are extralimital, coming from South America.

— and FREDERICK KNAB. New mosquitoes from Peru.

Insecutor Inscitiae Menstruis, 2, No. 4, April 24, 1914, pp. 58-62.

Describes the new genus *Phalangomyia* and two new species.

FOLSON, JUSTUS W. North American spring-tails of the subfamily Tomocerinae.

Proc. U. S. Nat. Mus., 46, No. 2037, Dec. 30, 1913, pp. 451-472, pls. 40, 41, figs. 1-10.

Describes two new species and one new variety, cotypes of which have been deposited in the National Museum.

GAHAN, A. B. New Hymenoptera from North America.

Proc. U. S. Nat. Mus., 46, No. 2035, Dec. 30, 1913, pp. 431-443, pl. 39.

Includes descriptions of *Euphoriana* and *Eumicrosoma*, new genera of the families Braconidae and Scelionidae respectively, and of 13 new species, mostly of the superfamily Chalcidoidea.

HEINRICH, CARL. Notes on some forest Coleophora with descriptions of two new species.

Proc. Ent. Soc. Washington, 16, No. 2, June 12, 1914, pp. 66-69.

HOWARD, L. O. Concerning some Aphelininae.

Proc. Ent. Soc. Washington, 16, No. 2, June 12, 1914, pp. 70-85, 1 fig.

Describes the new genus *Dirphys* and seven new species, and gives a table of the species of the genus *Physcus*.

HYSLOP, J. A. Description of a new species of Corymbites from the Sonoran zone of Washington State.

HYSLOP, J. A.—Continued.

Proc. Biol. Soc. Washington, 27, Mar. 20, 1914, pp. 69, 70.

KENNEDY, CLARENCE HAMILTON. Notes on the Odonata, or dragonflies, of Bumping Lake, Washington.

Proc. U. S. Nat. Mus., 46, No. 2017, Sept. 30, 1913, pp. 111-126, 58 figs.

KNAB, FREDERICK. New moth-flies (Psychodidae) bred from Bromeliaceae and other plants.

Proc. U. S. Nat. Mus., 46, No. 2015, Aug. 23, 1913, pp. 103-106.

Describes four new species of the genus *Psychoda*, bred from water found at the bases of the leaves of *Bromeliaceae* and in flower bracts of *Calathea*.

— A new Heterostylum from Mexico.

Insecutor Inscitiae Menstruis, 1, No. 9, Sept. 15, 1913, pp. 110, 111.

— A new Cuban Chaoborus.

Insecutor Inscitiae Menstruis, 1, No. 10, Oct. 30, 1913, pp. 121, 122.

— A new American Phlebotomus.

Insecutor Inscitiae Menstruis, 1, No. 11, Nov. 29, 1913, pp. 135-137, 1 fig.

Describes a new species, *P. atroclavatus*, from Trinidad.

— Gad-flies (Tabanidae) of the genus Stibasoma.

Proc. U. S. Nat. Mus., 46, No. 2033, Dec. 23, 1913, pp. 407-412.

Includes a key to the American members of this genus and description of one new species.

— A note on some American Simuliidae.

Insecutor Inscitiae Menstruis, 1, No. 12, Dec. 31, 1913, pp. 154-156.

The new name *Simulium lutzii* is proposed for *S. exiguum* Lutz, not of Roubaud.

KNAB, FREDERICK. A new Pantophthalmus.
Insecutor Inscitiae Menstruus, 2, No. 2, Feb. 28, 1914, pp. 27-29.
 Describes *P. fastuosus*, the larvae of which bore in trunks of trees in Trinidad.

On the genus *Cryptochaetum*.
Insecutor Inscitiae Menstruus, 2, No. 3, Mar. 30, 1914, pp. 33-36.
 Gives a table of certain species and describes *C. curtipenne*, from Ceylon.

Simuliidae de Chile Septentrional.
Annales de Zoologia Aplicada, 1, No. 1, Apr., 1914, pp. 17-22, pl. 1.
 Includes description of one new species.

Simuliidae of Peru.
Proc. Biol. Soc. Washington, 27, May 11, 1914, pp. 81-86.

Ceratopogoninae sucking the blood of caterpillars.
Proc. Ent. Soc. Washington, 16, No. 2, June 12, 1914, pp. 63-66.
 Gives notes on the blood-sucking habits of these flies and describes two new species.

(See also under Harrison G. Dyar.)

MALLOCH, J. R. A new species of Agromyzidae (Diptera).
Insecutor Inscitiae Menstruus, 1, No. 9, Sept. 15, 1913, pp. 109, 110.
 Describes *Milichia orientalis* from the Island of Guam.

A new species of *Simulium* from Texas.
Proc. Ent. Soc. Washington, 15, No. 3, Oct. 2, 1913, pp. 133, 134.

Two new species of Borboridae from Texas.
Proc. Ent. Soc. Washington, 15, No. 3, Oct. 2, 1913, pp. 135-137, 1 fig.

MALLOCH, J. R. A synopsis of the genera of Agromyzidae, with descriptions of new genera and species.
Proc. U. S. Nat. Mus., 46, No. 2018, Dec. 6, 1913, pp. 127-154, pls. 4-6.
 Gives keys to the subfamilies, tribes, genera and to the American species of some of the genera; describes *Paraleucopis*, *Paramilichia* and *Euchlorops*, new genera; proposes *Paramadiza*, new name for *Madiza* of authors, not of Fallen; describes eleven new species.

The genera of flies in the subfamily Botanobiinae with hind tibial spur.
Proc. U. S. Nat. Mus., 46, No. 2024, Dec. 6, 1913, pp. 239-266, pls. 23, 24.
 Gives keys to the four genera included and to the species of the genus *Hippelates*, ten of which are new; includes also descriptions of the new genera *Prohippelates* and *Pseudohippelates*.

American black flies or Buffalo gnats.
U. S. Dept. Agr., Bur. Ent., Tech. Ser., No. 26, Apr. 6, 1914, pp. 1-82, pls. 1-6.
 Describes the new genus *Paramululum* and thirteen new species, types of twelve of them being in the National Museum; proposes *lutzii* n. n. for *minutum* Surcouf and Gonzales-Rincones, not of Lugger.

Description of a new species of Agromyza from Porto Rico.
Proc. Ent. Soc. Washington, 16, No. 2, June 12, 1914, pp. 89, 90, 1 fig.

MARTINI, E. Some new American mosquitoes.
Insecutor Inscitiae Menstruus, 2, No. 5, June 8, 1914, pp. 65-76, pl. 2.
 Three new species are described, cotypes of which have been deposited in the National Museum.

MORGAN, A. C. New genera and species of Thysanoptera, with notes on distribution and food plants.

Proc. U. S. Nat. Mus.,
46, No. 2008, Aug. 23,
1913, pp. 1-55, figs.
1-79.

Describes the new genera *Rhipiphorothrips*, *Microthrips*, and *Horistothrips*, nineteen new species, and one new variety, mostly from North America.

PAINE, JOHN HOWARD. A new genus of Mallophaga from African guinea fowl in the United States National Museum.

Smithsonian Misc. Colls.,
61, No. 23,
Jan. 31, 1914, pp.
1-4, 1 fig.

Describes *Somaphantus lusius*, new genus and species, from specimens taken from *Numida ptilorhyncha*.

ROHWER, S. A. A new braconid from South America.

Proc. Ent. Soc. Washington, 15, No. 3, Oct.
2, 1913, p. 144.

— Notes on the feeding habits of two adult sawflies.

Proc. Ent. Soc. Washington, 15, No. 4,
Jan. 22, 1914, pp.
148, 149.

A female of *Tenthredella lineata* was seen eating an adult perlid, *Alloperla signata*; *Tenthredo arcuatus* was seen feeding on stamens of an umbelliferous plant.

— Two abnormally developed sawflies.

Proc. Ent. Soc. Washington, 15, No. 4,
Jan. 22, 1914, pp.
149, 150.

Records an abnormal female of *Xenapates terminalis* and a male of a species of the genus *Tenthredella*.

— Descriptions of new parasitic Hymenoptera.

Proc. Ent. Soc. Washington, 15, No. 4,
Jan. 22, 1914, pp.
180-188, 1 fig.

Describes the new genera *Stilbopoides* and *Helcostizidea* from the United States, and

ROHWER, S. A.—Continued.

five new species of Ichneumonidae, and two new species of Braconidae.

— Descriptions of two new genera of parasitic Hymenoptera.

Psyche, 21, No. 2,
April, 1914, pp. 79-
81, figs. 1, 2.

Describes the new genera *Anomopterus* and *Centistidea* and two new species of Braconidae.

SCHAUS, WILLIAM. New species of noctuid moths from tropical America.

Proc. U. S. Nat. Mus.,
46, No. 2039, Jan.
29, 1914, pp. 485-
549.

Describes the new genera *Chytonidia*, *Colodes*, *Encrusionia*, *Anorena*, *Ateneria*, *Sinosis*, *Neoptodes*, *Eromidia*, and *Polygnamptia*, and 136 new species of the family Noctuidae, all except three having been taken by the author and Mr. J. Barnes in British, Dutch, and French Guiana.

SHANNON, R. C. *Epimecis wiltii* Cresson and its host.

Proc. Ent. Soc. Washington, 15, No. 4,
Jan. 22, 1914, p.
162.

The larva of this species is an external parasite of spiders.

— Feeding habits of *Phlebotomus vexator* Coq.

Proc. Ent. Soc. Washington, 15, No. 4,
Jan. 22, 1914, pp.
165, 166.

Observations tend to show that this species feeds normally upon reptiles rather than upon warm-blooded animals.

VIERECK, HENRY L. Descriptions of twenty-three new genera and thirty-one new species of Ichneumon-flies.

Proc. U. S. Nat. Mus.,
46, No. 2031, Dec.
31, 1913, pp. 359-
386.

Describes the new genera *Eristernaulax*, *Macroneurodes*, *Tra-chagathis* and *Zadiolcogaster* of Braconidae; and of Ichneumonidae the following as new: *Aglaojoppidea*, *Cryptanuridimor-*

VIERECK, HENRY L.—Continued.

pha, Cryptophion, Cryptopterigimorpha, Digonocryptus, Epipelmidae, Joppocryptus, Lamprocryptidae, Monogonocryptus, Phanolabrychus, Photocryptus, Polyanidea, Polycyrtidae, Polycyrtimorpha, Thymarmorpha, Zaglyptomorpha and Zamastrus from South America, and *Diaglyptidea* and *Photoptera* from Java. The new species described are mostly from South America.

— Type species of the genera of Ichneumon flies.

Bull. U. S. Nat. Mus., No. 83, Jan. 31, 1914, pp. i-v, 1-186.

The author proposes the following: *Chorebidae* for *Chorebus* of authors, not of Haliday; *Deuteroxoridae* for *Xorides* of authors, not of Latreille; *Diclostrocerus* for *Closteroocerus* Hartig, not of Westwood; *Helconidae* for *Helcon* of authors, not of Nees; *Ischnopsidae* for *Ischus* of authors, not of Gravenhorst; *Mesostenidae* for *Mesostenus* of authors, not of Gravenhorst; *Myriarthridae* for *Myriarthrus* of authors, not of Foerster; *Pimplidae* for *Pimpla* of authors, not of Fabricius; *Plectiscidae* for *Plectiscus* of authors, not of Gravenhorst; *Plesiophthalmidae* for *Plesioph-*

VIERECK, HENRY L.—Continued.

thalmus Ashmead, not of Foerster; *Porzonidae* for *Porzon* of authors, not of Fallen; *Zaripio* for *Vipio* of authors, not of Latreille.

WALTON, W. R. A new tachinid parasite of *Diabrotica vittata*.

Proc. Ent. Soc. Washington, 16, No. 1, Mar. 23, 1914, pp. 11-14, pl. 1.

Describes *Neocelatoria ferox*, a new genus and species from Maryland, and gives observations on the method of oviposition.

— Four new species of Tachinidae from North America.

Proc. Ent. Soc. Washington, 16, No. 2, June 12, 1914, pp. 90-95, 1 fig.

Describes the new genus *Polycharoneura* and four new species.

WELD, LEWIS H. A new oak gall from Mexico.

Insecutor Inscitio Menstruus, 1, No. 10, Oct. 30, 1913, pp. 132-134, pl. 4.

Describes the gall, its maker, and a new species of inquiline. Paratypes of the gall maker have been deposited in the National Museum.

CRUSTACEANS.

RATHBUN, MARY J. Descriptions of new species of crabs of the families Grapsidae and Ocypodidae.

Proc. U. S. Nat. Mus., 46, No. 2030, Dec. 31, 1913, pp. 353-358, pls. 30-33.

The following species from the Indo-Pacific region are described: *Eriocheir leptognathus*, *Ptychognathus johannae*, *Sesarma* (*Sesarma*) *tiomanense*, and *Tympnomerus deschampsii*.

— New species of crabs of the families Grapsidae and Ocypodidae. [Scientific results of the Philippine cruise of the Fisheries steamer "Albatross," 1907-1910.—No. 31.]

Proc. U. S. Nat. Mus., 47, No. 2044, May 7, 1914, pp. 69-85.

One new species in each of the genera *Varuna*, *Ptychognathus*, *Macrophthalmus*, *Dottilla* and *Tympnomerus*, and

RATHBUN, MARY J.—Continued.

eight new species and two new subspecies in the genus *Sesarma* are described.

— New genera and species of American brachyrhynchous crabs.

Proc. U. S. Nat. Mus., 47, No. 2047, May 20, 1914, pp. 117-129, pls. 1-10, figs. 1-5.

Descriptions of three new genera of the family Gonoplacidae, five new species of the family Grapsidae and two new species of the family Ocypodidae. They are as follows: *Trizocarcinus* (subfamily *Carcinoplacinae*), *Cyrtopilar* and *Chasmophora* (subfamily *Prionoplacinae*), *Planes marinus*, *Cyrtograpsus altimanus*, *Platychirograpsus typicus*, *Nesarma* (*Sesarma*) *verleyi*, *S.* (*S.*) *jarvisi*, *S.* (*Holometopus*) *tampicense*, *Uca monilifera* and *U. musica*.

WORMS.

CRAWLEY, HOWARD. Initial stages of *Sarcocystis* infection.

Science (n. s.), 37, No. 952, Mar. 28, 1913, p. 498.

— Two new *Sarcosporidia*.

Proc. Acad. Nat. Sci., Phila., Apr. 21, 1914, pp. 214-218, 1 fig.

Describes *Sarcocystis leporum* from a rabbit, and *S. scotophaga* from a redstart (*Setophaga ruticilla*).

— The evolution of *Sarcocystis muris* in the intestinal cells of the mouse. (Preliminary note.)

Proc. Acad. Nat. Sci., Phila., June 24, 1914, pp. 432-436, pl. 15, figs. 1-12.

Describes the development of this parasite into two markedly dissimilar groups which are interpreted to be males and females. The first positive evidence of sexuality in the *Neosporidia* is supplied by the facts recorded in this paper.

HALL, MAURICE C. A new nematode, *Rictularia splendida*, from the coyote, with notes on other coyote parasites.

Proc. U. S. Nat. Mus., 46, No. 2012, Aug. 23, 1913, pp. 73-84, figs. 1-6.

Describes a new species of nematode from the small intestine of *Canis nebrascensis* from Amo, Colorado. A new subfamily of the family *Metastrongylidae*, is proposed, *Rictulariinae*, having *Rictularia* Frölich, 1802, as the type genus. A key is given for distinguishing the three species of *Rictularia* parasitic in carnivores. The species of parasites known to affect coyotes are listed, and *Taenia pisiformis* is recorded for the first time as a parasite of coyotes.

HARRING, HARRY K. A list of the Rotatoria of Washington and vicinity, with descriptions of a new genus and ten new species.

Proc. U. S. Nat. Mus., 46, No. 2032, Dec. 31, 1913, pp. 387-405, pls. 34-38.

HARRING, HARRY K.—Continued.

The list of Rotatoria of Washington, D. C., and adjacent parts of Maryland and Virginia numbers 246 species. The new genus described is *Rousselcia* (order Ploima) with the new species *R. corniculata*. The other new species are as follows: *Eucntrum aper*, *E. myriophylli*, *E. ricciae*, *Lecane stictica*, *Monostyla acus*, *M. crenata*, *M. sylvatica*, *Trichotria brevidactyla*, and *Asplanchnopus hyalinus*.

LINTON, EDWIN. Notes on a viviparous distome.

Proc. U. S. Nat. Mus., 46, No. 2040, Feb. 24, 1914, pp. 551-555, pl. 43, figs. 1-18.

Description of *Parorchis avitus*, new species, from the cloaca of a herring gull (*Larus argentatus*), Woods Hole, Mass.

RANSOM, B. H. Measles in cattle.

U. S. Dept. Agric., 28th *Ann. Rep. Bur. Animal Industry*, 1911 (1913), pp. 101-117, pls. 12-18.

Description of *Cysticercus bovis*, and discussion of the parasite with particular reference to its importance in meat inspection. It occurs in not less than 1 per cent of all cattle slaughtered in the United States, its prevalence being attributable to poor sanitary conditions in rural districts, and the common habit of eating raw or imperfectly cooked beef.

— The name of the sheep measles tapeworm.

Science (n. s.), 38, No. 972, Aug. 15, 1913, p. 230.

— *Cysticercus ovis*, the cause of tapeworm cysts in mutton.

U. S. Dept. Agric., *Journ. Agric. Research*, 1, No. 1, Oct. 10, 1913, pp. 15-58, pls. 2-4, figs. 1-13.

Reports results of experiments proving the parasite of sheep measles to be the intermediate stage of a dog tapeworm, and not the intermediate stage of *Taenia solium* of man as commonly supposed. This parasite has recently been found to be very common among sheep in

RANSOM, B. H.—Continued.

the Western United States. A full description of the larval and adult stages is given.

— [Agamemnematodum gaylordi.]

Bull. Bur. Fisheries, 32,
No. 790, April 22,
1914, pp. 500, 501.

Description of a larval nematode found by Gaylord & Marsh in tubercles in the hyperplastic thyroids of dogs which had been given pond mud and water, or water containing scrapings from troughs in which fish affected with carcinoma of the thyroid had been kept.

SMITH, F. Additional data on some of Eisen's species of Lumbricidae.

Science (n. s.), 39, No. 1001, Mar. 6, 1914,
pp. 364, 365.

Results of the preliminary study of specimens of three of Eisen's species in the National Museum, which have not been reported since the original descriptions. They are *Helodrilus tenuis*, *H. tumidus*, and *Tetragonura pupa*. A fuller account will be published in a more extended paper from the National Museum.

ECHINODERMS.

CLARK, AUSTIN HOBART. Descriptions of twenty new recent unstalked crinoids belonging to the families Antedonidae and Atelecrinidae from the Dutch East Indies.

Notes from the Leyden Museum, 34, No. 2,
Apr. 1, 1912, pp.
129-156.

The new species described form part of the collection made by the Dutch steamship "Siboga" in the Dutch East Indies. The diagnosis of a new genus of Atelecrinidae, *Atopocrinus*, is included. Duplicate specimens will be deposited in the National Museum.

— A revision of the crinoid family Mariametridae.

Proc. Biol. Soc. Washington, 26, June 30,
1913, pp. 141-144.

The numerous crinoid species heretofore referred to various genera placed in the Poniometridae and Mariametridae are here distributed among six genera, all of which are assigned to the Mariametridae. Of these six genera two, *Liparometra* and *Lamprometra*, are new.

— Description of a collection of unstalked crinoids made by Capt. Suenson in eastern Asia.

Proc. Biol. Soc. Washington, 26, Aug. 8,
1913, pp. 177-182.

Seven species are listed and described. The faunal relationships of the east Asiatic

CLARK, AUSTIN HOBART—Continued.

coasts are discussed. A systematic list of all the species occurring between southern Japan and Korea and Cochin China is given, and the faunal division to which each belongs is indicated. A set of duplicates will be placed in the National Museum.

— Revision of the crinoid genus Himerometra.

Proc. U. S. Nat. Mus.,
46, No. 2026, Nov.
25, 1913, pp. 279-
289.

Includes a history of the genus, a list of all the references to the included species, correctly identified, a key to the species, a list of the six species with the synonymy, range and depth of each, and a discussion of the phylogenetical interrelationships within the group.

— The systematic position of the crinoid family Plicatocrinidae.

Journ. Washington Acad. Sci., 3, No. 20,
Dec. 4, 1913, pp.
494-499.

The family Plicatocrinidae, including a number of recent genera, is shown to belong to the almost exclusively palaeozoic order Inadunata.

— Notes on the recent crinoids in the British Museum.

Smithsonian Misc. Colls., 61, No. 15,
Dec. 31, 1913, pp.
1-89.

CLARK, AUSTIN HOBART—Continued.

In this paper are presented the notes taken by the author upon the specimens of recent crinoids in the British Museum which he examined in London. Many of the 1538 specimens listed are compared with others in the collection of the National Museum.

— On the deep sea and comparable faunas.

Internationale Revue der gesamten Hydrobiologie und Hydrographie, 6, heft 1, 2/3, 1913, pp. 2-30, 133-146.

Includes a number of generalizations bearing upon faunal relations, paleontology and paleogeography, deduced from a study of marine animals, particularly the recent crinoids.

FISHER, WALTER K. New starfishes from the Philippine Islands, Celebes, and the Moluccas. [Scientific results of the Philippine cruise of the Fisheries steamer "Albatross," 1907-1910.—No. 30.]

Proc. U. S. Nat. Mus., 46, No. 2022, Sept. 30, 1913, pp. 201-224.

The third paper on starfishes in the Philippine series. Describes three new genera, *Haliptyle* (Oreasteridae), *Dissogenes* (Linckiidae), *Tarachaster* (Gasteridae), a new subgenus, *Xenoria*, of *Rhipidaster*, and 29 new species distributed in 20 genera.

KÖHLER, RENÉ. A contribution to the study of the Ophiurans of the United States National Museum.

Bull. U. S. Nat. Mus., No. 84, Apr. 9, 1914, pp. i-vii, 1-173, pls. 1-18.

A report on a collection of ophiurans chiefly from the West Indies and the southeastern United States but including a few specimens from other localities. Twenty-four new species and a new genus, *Ophiomistidium*, are described, also several imperfectly known species. The new species belong to the genera *Ophioderma*, *Ophioglypha*, *Ophiomusium*, *Ophiomistidium*, *Amphiura*, *Amphiotida*,

KÖHLER, RENÉ—Continued.

Ophiacantha, *Ophiomitrella*, *Ophiomitra*, *Ophiotrema*, *Ophiolimus*, *Ophiothrix*, *Ophiotetraplax*, *Ophiobrysella*, *Ophiocnemis*, *Sigesbeckia* and *Astrocchema*. To make the record complete for the West Indian ophiurans in the National Museum, a list is appended of those species identified many years ago by the Hon. Theodore Lyman, with the localities for each.

MORTENSEN, TH. Echinoidea (Part 2).

The Danish Ingolf-Expedition, 4, pt. 2, Copenhagen, 1907, pp. 1-200, pls. 1-19, figs. 1-27.

For purposes of identification and comparison with *Ingolf* material, the writer had studied a number of types in this Museum, and also sundry collections made by the U. S. Fisheries steamer "Albatross," which are described in this report.

VERRILL, ADDISON EMERY. Monograph of the shallow-water starfishes of the North Pacific coast from the Arctic Ocean to California, with revisions of various extralimital genera and species.

Harriman Alaska Series, 14, Smithsonian Inst. No. 2140, Apr. 30, 1914. Pt. 1, pp. i-xli, 1-408, figs. 1-16, Pt. 2, pls. 1-110.

Based on collections from the Harriman Expedition, the Canadian Geological Survey and various museums and individuals. A small collection from the United States National Museum is included. Every phase of the fauna is dealt with, its richness and relation to other faunæ, the habits of the starfishes, their different stages, characteristics and variations. Three orders of Asteroidea are recognized, viz., *Forcipulosa*, *Spinulosa* and *Phanerozona*. The family *Asteriidae* is treated in great detail. Analytical tables are given of the genera, species, etc.; all the forms are described and most of them are figured. Seventeen new genera and many new species, subspecies and varieties are made.

BRYOZOANS.

OSBURN, RAYMOND C. The Bryozoa of the Tortugas Islands, Florida.

Carnegie Inst. of Washington, Pub. No. 182, 1914, pp. 181-222, figs. 1-23.

Although this paper is concerned mainly with material obtained for the Carnegie Institu-

OSBURN, RAYMOND C.—Continued.

tion, specimens are recorded of two species, *Lichenopora hispida* and *Holoporella*, species not named, which were obtained by Dr. Paul Bartsch at Biscayne Key and are in the National Museum collection.

COELENTERATES.

HARGITT, CHARLES W. The Anthozoa of the Woods Hole region.

Bull. Bur. Fisheries, 32, No. 788, Apr. 25, 1914, pp. 223-254, pls. 41-44, figs. 1-5.

Gives a general account of the characteristics of the Anthozoa, their morphology, coloration, phosphorescence, repro-

HARGITT, CHARLES W.—Continued.

duction, distribution and economic relations. The systematic part includes descriptions of all the divisions down to species, and keys to families. Twenty-two species are included in the fauna. Two of the plates are colored.

PROTOZOANS.

CUSHMAN, JOSEPH AUGUSTINE. A monograph of the foraminifera of the North Pacific Ocean. Pt. 3. *Lagenidæ*.

Bull. U. S. Nat. Mus., No. 71, Dec. 12, 1913, pp. 1-ix, 1-125, pls. 1-47.

This is the third part of a work on the Foraminifera of the North Pacific Ocean, the first of which appeared in 1910 and the second in 1911. The author describes 5 subfamilies, 12 genera, 162 species, and 46 varieties, subspecies, and forms. Nearly all are figured. There are 13 new species, 17 new varieties and 2 new names for known species.

CUSHMAN, JOSEPH AUGUSTINE. A monograph of the Foraminifera of the North Pacific Ocean. Pt. 4. *Chilostomellidæ*, *Globigerinidæ*, *Nummulitidæ*.

Bull. U. S. Nat. Mus., No. 71, Feb. 28, 1914, pp. i-vi, 1-46, pls. 1-19.

This is the fourth part of a work on the Foraminifera, the third part of which is noticed above. The three families discussed are represented in the North Pacific Ocean by 14 genera, 41 species and 1 variety. All but two of the species are figured.

BOTANY.

COOK, O. F. Nomenclature of the Sapote and the Sapodilla.

Contr. U. S. Nat. Herb., 16, pt. 11, Dec. 13, 1913, pp. 277-285, pls. 100, 101.

GREENE, EDWARD L. Certain violet names.

Amer. Midland Naturalist, 3, No. 4, July, 1913, pp. 79-85.

— Novitates Boreali-Americanæ. 7. *Repertorium specierum novarum regni veget-*

GREENE, EDWARD L.—Continued.

tabis auctore F. Fedde, 13, Apr. 28, 1914, pp. 320-324.

Descriptions of new species, two in *Aquilegia*, one in *Aeonium*, five in *Vancouveria*, two in *Dodecatheon*, one in *Callistemon*, and one in *Agoscris*.

HITCHCOCK, A. S. Mexican grasses in the United States National Herbarium.

Contr. U. S. Nat. Herb., 17, pt. 3, July 15, 1913, pp. 181-339.

KRAUSE, K. A new shrub of the genus *Esenbeckia* from Colombia.

Smithsonian Misc. Colls., 61, No. 16, Sept. 29, 1913, p. 1.

MAXON, WILLIAM R. Some recently described ferns from the Southwest.

Amer. Fern Journ., 3, No. 4, Dec., 1913, pp. 109-116.

— Studies of tropical American ferns—No. 5.

Contr. U. S. Nat. Herb., 17, pt. 4, Jan. 21, 1914, pp. 391-425, pls. 11-23, figs. 8-10.

— A family of ferns new to the United States.

Amer. Fern Journ., 4, No. 1, Mar., 1914, pp. 15-17.

PITTIER, HENRY. On the relationship of the genus *Aulacocarpus*, with description of a new Panamanian species.

Smithsonian Misc. Colls., 63, No. 4, Mar. 18, 1914, pp. 1-4, figs. a-c.

— New or noteworthy plants from Colombia and Central America—4.

Contr. U. S. Nat. Herb., 18, pt. 2, Apr. 16, 1914, pp. 69-86, pls. 42-56, figs. 76-87.

RADIKOFER, L. New Sapindaceae from Panama and Costa Rica.

Smithsonian Misc. Colls., 61, No. 24, Feb. 9, 1914, pp. 1-8.

ROSE, J. N. Botanical observations by Dr. J. N. Rose in Europe and in Kansas.

Smithsonian Misc. Colls., 60, No. 30, July 3, 1913, pp. 74-76, 1 fig.

— *Populus Maedougallii*: a new tree from the Southwest.

Smithsonian Misc. Colls., 61, No. 12, Sept. 3, 1913, pp. 1, 2, pl. 1.

— *Mamillaria arida* Rose, spec. nov.

Monatsschr. für Kakteenkunde, 23, No. 12, Dec. 15, 1913, p. 181.

SAFFORD, WILLIAM E. *Annona sericea* and its allies.

Contr. U. S. Nat. Herb., 16, pt. 10, Dec. 13, 1913, pp. 263-275, pls. 85-99, figs. 42-44.

— Classification of the genus *Annona*, with descriptions of new and imperfectly known species.

Contr. U. S. Nat. Herb., 18, pt. 1, June 17, 1914, pp. 1-68, pls. 1-41, figs. 1-75.

SMITH, JOHN DONNELL. Undescribed plants from Guatemala and other Central American republics. 37.

Botan. Gaz., 56, No. 1, July 16, 1913, pp. 51-62.

Descriptions of new species in *Abutilon*, *Comocladia*, *Dalea*, *Dioclea*, *Phaseolus*, *Platymiscium*, *Lonchocarpus*, *Derris*, *Diplotropis*, *Mimosa*, *Pithecolobium*, *Aralia*, *Manettia*, *Rondeletia*, *Ipomoea*, *Cacabus*, *Salvia*, *Gaiadendron*, and *Euphorbia*.

— Undescribed plants from Guatemala and other Central American republics. 38.

Botan. Gaz., 57, No. 5, May 16, 1914, pp. 415-427.

Descriptions of new species in *Erysimum*, *Xylosma*, *Sloanea*, *Ilex*, *Connarus*, *Drepanocarpus*, *Lonchocarpus*, *Leucaena*, *Pithecolobium*, *Rubus*, *Gilbertia*, *Paramea*, *Jacquemontia*, *Cyphomandra*, *Brachistus*, *Columnea*, *Aegiphila*, and *Scutellaria*. There is also described a new genus, *Guamatela*, of the family Rosaceae, with a single member, *G. tuerckheimii*, sp. nov.

— and J. N. ROSE. A monograph of the *Hauyeae* and *Gongylocarpeae*, tribes of the Onagraceae.

Contr. U. S. Nat. Herb., 16, pt. 12, Aug. 23, 1913, pp. 287-298, figs. 45-54.

STANLEY, PAUL C. A new Dodecatheon from New Mexico.

Proc. Biol. Soc. Washington, 26, Oct. 23, 1913, pp. 195, 196.

STANLEY, PAUL C. Studies of tropical American phanerogams—No. 1.

Contr. U. S. Nat. Herb.,
17, pt. 5, Jan. 30,
1914, pp. 427-458,
pls. 24-31.

Includes revisions of the genera *Sommerea*, *Cobaea*, and *Watsonamia*, and a description of a new genus, *Nothophlebia*, in the Rubiaceae.

— Two additions to the flora of Louisiana.

Torreya, 14, No. 2, Feb.,
1914, pp. 21-24.

TIDESTROM, IVAR. *Botrychium virginianum* and its forms.

Contr. U. S. Nat. Herb.,
16, pt. 13, Dec. 29,
1913, pp. 299-303,
pl. 102.

— *Sphenoclea zeylanica* and *Caperonia palustris* in the southern United States.

Contr. U. S. Nat. Herb.,
16, pt. 13, Dec. 29,
1913, pp. 305-307,
pl. 103.

GEOLOGY AND MINERALOGY.

GILBERT, CHESTER G., and JOSEPH E. POGUE. The Mount Lyell Copper District of Tasmania.

Proc. U. S. Nat. Mus.,
45, No. 2005, July
22, 1913, pp. 609-
625, pls. 48-51, 1 fig.

After reviewing the history and geology of this important copper district, the paper gives the results of a detailed metallographic study of the ores. The deposition is indicated to have occurred during a distinct mineralizing epoch marked by solutions progressively changing in composition and depositing a series of sulphide minerals in sequential and transitional stages. The article closes with a brief description of analogous deposits and a selected bibliography.

POGUE, JOSEPH E. (See under Chester G. Gilbert.)

WHERRY, EDGAR T. Variations in the compositions of minerals.

WHERRY, EDGAR T.—Continued.

Journ. Washington Acad. Sci., 4, No. 5, Mar. 4, 1914, pp. 111-114.

A new definition for a mineral species is proposed which takes into account variations in composition due to adsorption and solid solution, and a new term, *meta-colloid*, is suggested for colloid minerals which have become crystalline, the reasons for these recommendations being discussed at length. Based largely on a study of Museum material.

— Mineral nomenclature.

Science (n. s.), 30, No. 1007, Apr. 17, 1914, pp. 575-577.

Discussion of a paper by A. F. Rogers, recommending the use of mineral species names as group names when isomorphism is recognized, and the use of chemical prefixes to designate the end members of isomorphous series. Based largely on a study of Museum material.

PALEONTOLOGY.

BASSLER, R. S. Notes on an unusually fine slab of fossil crinoids.

Proc. U. S. Nat. Mus.,
46, No. 2009, Nov.
29, 1913, pp. 57-59,
pls. 1, 2.

Discusses the discovery, excavation, and preparation for exhibition of a slab of Lower Devonian limestone 4 feet wide by 7 feet long, crowded with un-

BASSLER, R. S.—Continued.

usually well preserved examples of the genus *Scyphocrinus*, with which are associated the common bulb-like bodies known as *Camarocrinus*. The slab, in connection with other specimens, is the basis of a monograph upon the genus *Scyphocrinus* now in preparation by Mr. Frank Springer.

BASSLER, R. S., T. P. MAYNARD, D. W. OHERN, CHARLES SCHUCHERT, C. K. SWARTZ, and E. O. ULRICH. Systematic Paleontology of the Lower Devonian deposits of Maryland.

Maryland Geol. Surv., Lower Devonian, 1913, pp. 195-542, pls. 17-98, figs. 3-17.

A systematic description of the Lower Devonian fauna of Maryland. Many old forms are redescribed and figured, and a number of new genera and species founded. The article is based largely on Museum material.

BERRY, EDWARD WILBER. The Upper Cretaceous and Eocene floras of South Carolina and Georgia.

Prof. Paper, U. S. Geol. Surv., 84, 1914, pp. 1-200, pls. 1-29, figs. 1-12.

Presents the first systematic account of fossil plants from the Coastal Plain districts of Georgia and South Carolina, and although preliminary to a larger work, it describes a considerable flora. Practically all of the specimens described are the property of the National Museum.

DALL, WILLIAM HEALEY. On a brackish water Pliocene fauna of the Southern Coastal Plain.

Proc. U. S. Nat. Mus., 46, No. 2023, Dec. 6, 1913, pp. 225-237, pls. 20-22.

Describes the invertebrate molluscan fossils of a newly discovered fauna, comprising the following new species and varieties: *Rangia cuneata* var. *solidula*, *Heterodonax alexandra*, *Unio* (*Lampsilis?*) *sandrius*, *U.* (*Pleurobema?*) *alixus*, *U.* (*Unio*) *musculus*, *Potamides matsoni*, *P. matsoni* var. *gracilior*, *Cerithiopsis?* *burkevillensis*, *Pachychelus unogrammatus*, *P. suavis*, *Turritella satilla*, *Isapis obsoleta*, *Syrnola thelma*, *Paludestrina aldrichi*, *P. curva*, *P. cingulata*, *P. turricula*, *P. milium*, *Pyrgulopsis?* *satilla*, *Neritina sparsilincata*, and *Planorbis ophis*. The types are in the National Museum.

GIDLEY, JAMES WILLIAMS. Preliminary report on a recently discovered Pleistocene cave deposit near Cumberland, Maryland.

Proc. U. S. Nat. Mus., 46, No. 2014, Aug. 23, 1913, pp. 93-102, figs. 1-8.

A brief history of the discovery, locality, and description of the cave deposit is followed by a geologic history with a short discussion of its relative age, and probable manner of entombment of the animal remains. It is concluded that this deposit is older than the Conard Fissure of Arkansas, being probably about the equivalent of the Port Kennedy, Pa., cave deposit. A preliminary list of the fauna represented is given, followed by a description of two new species of carnivores, supplemented by brief notes on the lower teeth of canids, with especial reference to the distinctive characters presented in the carnassials. A classification of the principal living groups, with two extinct species included, is here based on these characters.

— Some new American pycnodont fishes.

Proc. U. S. Nat. Mus., 46, No. 2036, Dec. 31, 1913, pp. 445-449, figs. 1-6.

Five new species of pycnodont fishes are here described, those referable to *Microdon*, an Old World genus, constituting the first record of the presence of this form in deposits of this continent.

GILMORE, CHARLES W. A new Ceratopsian dinosaur from the Upper Cretaceous of Montana, with note on *Hypacrosaurus*.

Smithsonian Misc. Colls., 63, No. 3, Mar. 21, 1914, pp. 1-10, pls. 1, 2, figs. 1-3.

A preliminary description of the new Ceratopsian dinosaur *Brachyceratops montanensis*, from the Two Medicine formation of northwestern Montana. This form is of interest as being the most diminutive member of the Ceratopsia yet discovered. The finding of remains of the

GILMORE, CHARLES W.—Continued.

trachodont reptile *Hypacrosaurus* in the Judith River (Belly River) beds is announced.

GIRTY, GEORGE H. A report on Upper Paleozoic fossils collected in China in 1903-04.

Carnegie Inst. of Washington, Publ. No. 54, Research in China, 3, 1913, pp. 297-334, pls. 27-29.

In this paper a detailed description of the Upper Paleozoic fossils collected by the Carnegie Institution expedition is given. The faunas are compared with previously described Carboniferous faunas from eastern Asia, and correlations are made with Russian and American sections. The conclusions are that Upper Carboniferous is undoubtedly represented and constitutes the major portion of the collection. Lower Carboniferous and Permian may be present, but the evidence is inconclusive. One fauna is given a possible range from Upper Silurian to Lower Carboniferous. The fossils described are the property of the U. S. National Museum.

HAY, OLIVER P. The extinct bisons of North America: with description of one new species, *Bison regius*.

Proc. U. S. Nat. Mus., 46, No. 2021, Dec. 6, 1913, pp. 161-200, pls. 8-19, figs. 1-10.

Describes one new species and discusses the American extinct species of *Bison*, and also for comparison the European species *B. priscus*. The article contains several valuable tables of comparative measurements and a synopsis of the characters of North American bisons.

—Camels of the fossil genus Camelops.

Proc. U. S. Nat. Mus., 46, No. 2025, Dec. 6, 1913, pp. 267-277, pls. 25, 26, 1 fig.

Reviews and discusses the characters of the American Pleistocene camels variously referred to the genus *Camelops*. Concludes that *C. kansanus*, *C. hesternus*, and *C. huferfanensis* are distinct species; that it is

HAY, OLIVER P.—Continued.

not at present possible to decide the status of *Megalomeryx nobrarensis* Leidy; and accepts the following species of *Camelops* as valid: *C. kansanus*, *C. californicus*, *C. hesternus*, *C. ritakerianus*, *C. nobrarensis*, *C. macrocephalus*, and *C. huferfanensis*.

HUENE, FRIEDRICH V. Über die Zweistämmigkeit der Dinosaurier, mit Beiträgen zur Kenntnis einiger Schädel.

Neues Jahrb. für Min., Geol., und Pal., Bellage-Band 37, 1914, pp. 577-589, pls. 7-12.

Discusses the evidence as shown by the skulls for the separation of the order Dinosauria into the two suborders Saurischia and Ornithischia. The article is based in part on specimens belonging to the U. S. National Museum, some of which are figured.

KIRK, EDWIN. Notes on the fossil crinoid genus *Homocrinus* Hall.

Proc. U. S. Nat. Mus., 46, No. 2038, Feb. 14, 1914, pp. 473-483, pl. 42.

A study of the type species of *Homocrinus*, *H. parvus* Hall, led to the discovery that the genus is structurally quite different from what has been supposed. In the present paper *Homocrinus* is redefined, and a new genus, *Lasiocrinus*, erected for the reception of such forms as *Homocrinus scoparius* Hall, which has been chosen as the type of the new genus. A new family, *Homocrinidae*, is proposed. The material upon which the studies were based is in the Springer collection, deposited in the U. S. National Museum.

KNOWLTON, F. H. The Jurassic flora of Cape Lisburne, Alaska.

Prof. Paper, U. S. Geol. Surv., 85-D, Jan. 28, 1914, pp. 39-64, pls. 5-8.

The Jurassic section of Cape Lisburne, to which the name Corwin formation has been given, reaches the thickness of over 15,000 feet. So far as at present known, the fossil flora is uniformly distributed

KNOWLTON, F. H.—Continued.

throughout, and embraces 17 species, only one of which is described as new. This flora is compared with known Jurassic floras of various parts of the world, and the conclusion is reached that it is not only undoubtedly Jurassic in age—which had previously been questioned—but belongs either in the upper part of the Middle Jurassic or Brown Jura, or the extreme lower part of the Upper Jurassic or White Jura—that is to say it is probably not older than the Bathonian, and certainly not younger than the Oxfordian. Several pages are devoted to a discussion of the geographic range of Jurassic floras in general, their means and avenues of dispersal, and the probable climatic conditions that prevailed in Alaska at the time this flora flourished there.

MAYNARD, T. P. (See under R. S. Bassler.)

OHERN, D. W. (See under R. S. Bassler.)

PETRUNKEVITCH, ALEXANDER. A monograph of the terrestrial Paleozoic Arachnida of North America.

Trans. Connecticut Acad. Arts and Sci., 18, June, 1913, pp. 1–137, pls. 1–13, figs. 1–88.

This monograph constitutes a revision of all known North American Paleozoic terrestrial arachnids. In addition, 24 species and 13 genera are described for the first time, and 2 new families and one new order are established. Valuable information as regards the morphology and phylogeny of the Arachnida is given. The paper is based in part on material in the collection of the U. S. National Museum, which contains many of the described types of these fossils, including 9 of the new species.

POWERS, SIDNEY. (See under Hervey W. Shimer.)

SCIUCHERT, CHARLES. (See under R. S. Bassler.)

SHIMER, HERVEY W., and SIDNEY POWERS. A new sponge from the New Jersey Cretaceous.

Proc. U. S. Nat. Mus., 46, No. 2019, Dec. 6, 1913, pp. 155, 156, pl. 7.

Describes the new species of fossil sponge *Coeloptychium? jerseyense* from the Mount Laurel-Navesink beds of the Cretaceous at Atlantic Highlands, New Jersey.

SHUFELDT, R. W. Review of the fossil fauna of the Desert Region of Oregon, with a description of additional material collected there.

Bull. Amer. Mus. Nat. Hist., 32, Art. 6, July 9, 1913, pp. 123–178, pls. 9–43.

Reviews the fossil fauna of the Christmas Lake region of Oregon, with especial reference to the extinct birds, describing three new species. Discusses and figures a small collection of avian remains in the U. S. National Museum.

— Further studies of fossil birds with descriptions of new and extinct species.

Bull. Amer. Mus. Nat. Hist., 32, Art. 16, Aug. 4, 1913, pp. 285–306, pls. 51–59.

Describes *Diatryma ajax*, *Palaeophasianus meleagroides*, *Aquila antiqua*, *A. ferox*, *A. lydekkeri*, *Palaeospiza hatcheri*, and *Proictinia gilmorei*, all new species, two of which belong to the National Museum collection. Notes on many unidentified forms are inserted at various places throughout the article.

— Fossil feathers and some heretofore undescribed fossil birds.

Journ. Geol., 21, No. 7, Oct.–Nov., 1913, pp. 628–652, figs. 1–12.

Describes and figures all available fossil bird feathers. Two new forms, *Hebe schucherti* and *Yalavis tenutipes* are named. One specimen, belonging to the National Museum, is described and figured.

SHUFELDT, R. W. Extinct ostrich birds of the United States.

Aquila, 20, 1913, pp. 411-422, pls. 1-5.

Discusses the probable relationships of many extinct so-called ostrich-like birds, with especial reference to the genera *Diatryma* and *Gastornis*. The new family Diatrymidae is proposed. U. S. National Museum specimens are described and figured.

STEPHENSON, LLOYD WILLIAM. Cretaceous deposits of the eastern Gulf region and species of *Exogyra* from the eastern Gulf region and the Carolinas.

Prof. Paper, U. S. Geol. Surv., 81, 1914, pp. 1-77, pls. 1-21, figs. 1, 2.

Describes the Cretaceous formations in Georgia, Alabama, Mississippi, Tennessee and Kentucky, and gives full lists of the invertebrate faunas; also describes and figures the species of *Exogyra*, including a new species and two new varieties, from the Cretaceous of the same area and from the Carolinas. The specimens are the property of the U. S. National Museum.

SWARTZ, C. K. (See under R. S. Bassler.)

ULRICH, E. O. (See under R. S. Bassler.)

WALCOTT, CHARLES D. The Cambrian faunas of China.

Carnegie Inst. of Washington, Publ. No. 54, Research in China, 3, 1913, pp. 1-276, pls. 1-24, figs. 1-9.

An exhaustive review of the Cambrian collections made by Messrs. Willis and Blackwelder in 1903-4, and by Prof. Joseph P. Iddings in 1909. Four preliminary reports were revised in this memoir. Describes 63 genera, 5 subgenera, 245 species, and 11 varieties. Treats Cambrian fauna exhaustively—historical review, synonymy, bibliography, localities, geological conditions, paleontology, stratigraphic and geographic distribution. About 950 figures of fossils are given.

WALCOTT, CHARLES D. Cambrian Geology and Paleontology. II. No. 11.—New Lower Cambrian subfauna.

Smithsonian Misc. Colls., 57, No. 11, July 21, 1913, pp. 309-326, pls. 50-54.

Describes and figures 10 species from the Robson Peak district fauna, 9 of which are new, as follows: *Mickwitzia muraleensis*, *Lingulella chapa*, *L. hitka*, *Oborella nuda*, *Holmia? maecri*, *Wanneria occidens*, *Callaria curcharis*, *C. perfecta*, and *Olenellus truemanii*.

— Cambrian Geology and Paleontology. II. No. 12.—Cambrian formations of the Robson Peak District, British Columbia and Alberta, Canada.

Smithsonian Misc. Colls., 57, No. 12, July 24, 1913, pp. 327-343, pls. 55-59, figs. 11, 12.

Results of study of the Robson Peak section in 1912, including geological section, nomenclature, stratigraphic section showing Ordovician to pre-Cambrian, and comparison suggesting possible correlation with Mount Bosworth section.

— Cambrian Geology and Paleontology. II. No. 13.—*Dikelocephalus* and other genera of the Dikelocephalinae.

Smithsonian Misc. Colls., 57, No. 13, April 4, 1914, pp. 345-412, pls. 60-70, figs. 13-20.

Discusses previous classification of *Dikelocephalus* and reclassifies the species under five different genera, three of which, *Saukia*, *Oscoolia*, and *Calvinella*, are new. Describes 13 new species as follows: *Dikelocephalus? dalyi*, *D. texanus*, *D. ranhornei*, *Saukia coloradoensis*, *S. fallax*, *S. junta*, *S. leucostia*, *S. pyrene*, *S. rustica*, *S. stosei*, *S. wardi*, *Calvinella ozarkensis*, and *C. tenuisculpta*. Fixes spelling of *Dikelocephalus* as originally. Proposes provisional classification of pre-Ordovician formations in the Upper Mississ-

WALCOTT, CHARLES D.—Continued.

issippi Valley, and describes Jordan, St. Lawrence, Franconia, and Eau Claire formations, with lists of fauna.

— Cambrian Geology and Paleontology. III. No. 1.—The Cambrian faunas of Eastern Asia.

Smithsonian Misc. Colls., 64, No. 1, April 22, 1914, pp. 1-75, pls. 1-3, figs. 1-9.

A reprint of the Introduction, historical review, bibliography, etc., of "The Cambrian faunas of China," published by permission of the Carnegie Institution, with slight revision and additions. The three plates were reproduced from Publication No. 54, volume 1, Carnegie Institution of Washington.

WELLER, STUART. A report on Ordovician fossils collected in Eastern Asia in 1903-4.

Carnegie Inst. of Washington, Publ. No. 54, Research in China, 3, 1913, pp. 279-294, pls. 25, 26.

In this paper two widely separated Ordovician faunas are described, one coming from the Province of Shantung, the other from eastern Ssi-ch'uan. The first of these faunas consists of poor material, the exact age of which it is impossible to determine. It is, however, referred to the Middle Ordovician, or Mohnwikan. The second fauna is correlated without much question with the Black river of America on the one hand, and the *Vaginatus* horizon of Russia on the other. A detailed description of fossils is given, with figures, and comparisons are made with other known Ordovician faunas of eastern Asia. The material described is the property of the U. S. National Museum.

WHITE, DAVID. Resins in Paleozoic plants and in coals of high rank.

Prof. Paper, U. S. Geol. Surv., 85-E, Mar. 25, 1914, pp. 65-96, pls. 9-14.

WHITE, DAVID—Continued.

Resinous substances, in microscopical particles and as lumps visible to the naked eye, appear to be present in all, or nearly all, coals of Mesozoic or Tertiary age that have not been subjected to such dynamic alteration as to cause the transformation of the resins. This transformation occurs when the fixed carbon in the coals approaches 70 per cent pure coal basis. The author describes and illustrates resins and resinous substances in Paleozoic coals of a rather low bituminous rank, thus confirming the interpretations suggested by various paleobotanists that some of the secretory cells or canals noted in petrified fragments of certain Paleozoic plant types may have contained resins.

WILLIAMS, HENRY SHAHER. New species of Silurian fossils from the Edmunds and Pembroke formations of Washington County, Maine.

Proc. U. S. Nat. Mus., 45, No. 1985, July 22, 1913, pp. 319-352, pls. 29-31.

This paper contains descriptions of the more characteristic fossils of the Silurian formations mapped in the Eastport folio of the U. S. Geological Survey. Eight species are described from the Edmunds formation, and 12 from the Pembroke. All of these are illustrated and the types are in the collections of the U. S. National Museum.

— Recurrent *Tropidoleptus* zones of the Upper Devonian in New York.

Prof. Paper, U. S. Geol. Surv., 79, 1913, pp. 1-103, pls. 1-6, figs. 1-18.

As the result of a study of the Upper Devonian faunas of the Watkins Glen and Catatonk quadrangles, New York, Professor Williams made an interesting discovery of the recurrence in beds of Portage and Chemung age of fossils characteristic of the Middle Devonian. This led to an intensive study of the faunas, the results of which are given in the present paper.

WILLIAMS, HENRY SHALER—Contd.

Of special interest is a detailed discussion of the variations observed in the recurring species, and a discussion of the physical history of the region as shown by the succession of

WILLIAMS, HENRY SHALER—Contd.

faunas. The variations of the fossils are well illustrated by numerous figures. The original material upon which the studies were made is the property of the U. S. National Museum.

OCEANOGRAPHY.

BIGELOW, HENRY B. Oceanographic cruises of the U. S. Fisheries Schooner "Grampus" 1912-1913.

Science (n. s.), 38, No. 982, Oct. 24, 1913, pp. 599-601.

An account of two cruises of the *Grampus* for oceanographic research during the summers of 1912 and 1913 and extending from Nova Scotia to Chesapeake Bay. Incidentally mentions the plankton collections, covering various groups of invertebrates. These collections are in the National Museum.

— Explorations in the Gulf of Maine. July and August, 1912, by the U. S. Fisheries Schooner "Grampus." Oceanography and notes on the Plankton.

Bull. Mus. Comp. Zool., 58, No. 2, Feb., 1914, pp. 31-147, pls. 1-9.

The latter part of this report deals with the invertebrate plankton, the larger forms consisting chiefly of crustaceans, chaetognaths, meduse, siphonophores, ctenophores, salpæ and *Tomopteris*, and the microplankton composed largely of *Ceratium*. The collections are in the National Museum.

CLARK, AUSTIN HOBART. The circulation of the abyssal water of the oceans.

Journ. Washington Acad. Sci., 4, No. 1, Jan. 4, 1914, pp. 1-3.

Gives a brief sketch of the circulation of the abyssal waters of the oceans as deduced from a study of the distribution of the bottom-living recent crinoids.

— The circulation of the abyssal waters of the oceans, as indicated by the geographical and bathymetrical distribution of the recent crinoids.

Bull. de l'Institut Océanographique (Fondation Albert Ier, Prince de Monaco), No. 285, Feb. 25, 1914, pp. 1-27.

The circulation of the abyssal waters of the oceans as indicated by the geographical and bathymetrical distribution of the recent crinoids, especially those belonging to the genus *Florometra*, is discussed in detail. This paper is an extension of the preceding.

EXPLORATION AND FIELD WORK.

Explorations and field-work of the Smithsonian Institution in 1912.

Smithsonian Misc. Colls., 60, No. 30, July 3, 1913, pp. 1-76, figs. 1-82.

This paper contains notes on the following expeditions, the most of which resulted in the acquisition of material for the Museum collections: A zoölogical and ethnological expedition to Dutch East Borneo, maintained by Dr. W. L. Abbott; Mr. D. D. Streeter's expedition to Borneo; Mr. George Mixter's collecting trip to Lake Baikal;

Explorations and field-work of the Smithsonian Institution in 1912—Continued.

Dr. W. L. Abbott's operations in Cashmere; zoölogical expedition of Dr. Theodore Lyman to the Altai Mountains, Siberia and Mongolia; a search in eastern Asia for the race that peopled America; results of Mr. Paul J. Rainey's East African hunting expedition; the Smithsonian expedition to Algeria for the study of the heat of the sun; anthropological researches on St. Lawrence Island, Alaska; hunting and trapping on the Alaska-

Explorations and field-work of the Smithsonian Institution in 1912—Continued.

Canadian boundary; geological explorations in the Canadian Rockies; field-work of the Bureau of American Ethnology in 1912; observations on birds and their nests in Newfoundland and Labrador, by Mr. A. C. Bent; a newly-discovered cave deposit near Cumberland, Maryland; collecting fossil echinoderms in the Appalachian Valley and in

Explorations and field-work of the Smithsonian Institution in 1912—Continued.

Missouri; field-studies along the Patuxent and Potomac Rivers, Chesapeake Bay, and the North Carolina coast; observations on mollusks among the Bahama Islands and the Florida Keys; completion of the Smithsonian biological survey of the Panama Canal Zone; botanical observations by Dr. J. N. Rose in Europe and in Kansas.

MISCELLANEOUS.

CLARK, AUSTIN HOBART. Nocturnal animals.

Journ. Washington Acad. Sci., 4, No. 6, Mar. 19, 1914, pp. 139-142.

The faunal and paleogeographical significance of noc-

CLARK, AUSTIN HOBART—Continued.

turnal as opposed to diurnal animals, and the correspondence between the former and the animals of the deep sea, are discussed.

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